Vol. I

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1941

No. 706

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, ET AL., PETITIONERS,

vs.

FIELDCREST DAIRIES, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

PETITION FOR CERTIORARI FILED OCTOBER 20, 1941.

CERTIORARI GRANTED NOVEMBER 24, 1941.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

Petitioners,

vs.

FIELDCREST DAIRIES, (INC.),

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

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TRANSCRIPT OF RECORD

IN THE

United States Circuit Court of Appeals
For the Seventh Circuit

No. 7502

FIELDCREST DAIRIES, (Inc.),
Plaintiff-Appellee,

vs.

CITY OF CHICAGO, (A Municipal Corporation), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Defendants-Appellants.

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

TRANSCRIPT OF RECORD FILED JAN. 20, 1941.
PRINTED RECORD.

IN THE

United States Circuit Court of Appeals
For the Seventh Circuit

No. 7502

FIELDCREST DAIRIES, (INC.),
Plaintiff-Appellee,

vs.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,
Defendants-Appellants.

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

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2215 Pleas in the District Court of the United States for the Northern District of Illinois, Eastern Division, begun and held at the United States Court Room, in the City of Chicago, in said District and Division, before the Honorable Charles E. Woodward, District Judge of the United States for the Northern District of Illinois on Twenty-third day of October, in the year of our Lord one thousand nine hundred and forty, being one of the days of the regular October Term of said Court, begun Monday, the Seventh day of October, and of our Independence the 165th year. Placita.

Present:

Honorable John P. Barnes, District Judge.
William H. McDonnell, U. S. Marshal.
Hoyt King, Clerk.

2216 IN THE DISTRICT COURT OF THE UNITED STATES

Northern District of Illinois,

Eastern Division.

Fieldcrest Dairies, (Inc.) *vs.* City of Chicago (a Municipal corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago.	Civil Action No. 316.

Be It Remembered, that the above-entitled action was commenced by the filing of the following Complaint in Chancery in the above-entitled cause, in the office of the Clerk of the District Court of the United States for the Northern District of Iilinois; Eastern Division, on this the Second day of February, A. D. 1939.

Filed Feb. 2, 1939.

2217 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

COMPLAINT IN CHANCERY FOR A DECLARATORY JUDGMENT—EQUITABLE RELIEF SOUGHT.

To the Honorable Judges of the District Court of the United States, Northern District of Illinois, Eastern Division, in Chancery Sitting:

1. Plaintiff Fieldcrest Dairies, (Inc.) alleges that it is a duly organized and existing corporation under the laws of the State of Michigan, and that it is now duly authorized to, and is doing business in the State of Illinois by virtue of a certificate so authorizing it to act and issued by the Secretary of the State of Illinois on November 29, 1937; that plaintiff was incorporated in the State of Michigan on November 5, 1937, and thereafter duly qualified to transact business in the State of Illinois on the date aforesaid.

2218 2. Plaintiff alleges that the amount in controversy in this litigation is in excess of Three Thousand

Dollars, ($3,000.00); that the plaintiff is now expending daily large sums of money in the use of machinery and equipment for the bottling, packaging, sealing and distribution of milk and milk products in "Pure-Pak" non-absorbent single service containers made of virgin spruce material; that said containers are used in the distribution of milk by the plaintiff and in its sale of milk and milk products in the County of Cook and in the cities and villages hereinafter described; that said sale of milk and milk products is to retail stores and to a large number of consumers in said cities and villages hereinafter described.

3. Plaintiff further alleges that it is now doing business in the State of Illinois and the purposes and objects for which it was organized and now exists are: to buy, sell, deal in, manufacture, process, cut, store and ship cream, milk, butter, cheese, ice cream, ice-cream mix, sugar, condensed milk, powdered milk, evaporated milk, malted milk, distilled water, milk products and by-products, ice and all such other articles as may be necessary or may be conveniently used in connection with the aforesaid mentioned business or businesses; to own, lease and manage, directly or through subsidiaries, dairies and dairy farms, creameries and cheese factories, and conduct a general manufacturing business; that said business is now being carried on in the vicinity of the City of Chicago by the plaintiff corporation and milk and milk products are being sold and distributed by the plaintiff in Winnetka, Elmhurst,
2219 Brookfield, Western Springs, Glen Ellyn, Villa Park, Evanston, Wilmette, Glencoe, Oak Park, Downers Grove, Hinsdale, LaGrange, Berwyn, Riverside, River Forest, Bellwood, Elmwood Park and twenty-four other cities and villages in and about the County of Cook and other counties in the State of Illinois; that said sales and distribution of milk and milk products by plaintiff are made by permission and consent of the health officers, the boards of health and the local officials or authorities in said cities and villages. Plaintiff further alleges that in numerous of said above cities and villages, the United States Public Health Service Standard Milk Ordinance is in full force and effect and governs the sale and distribution of milk and milk products, and that plaintiff's sale and distribution in said cities and villages is in compliance with said ordinance in force in said municipalities.

4. Plaintiff further represents that the milk and milk products sold and distributed by it are secured bottled,

pasteurized and packed at its plant and factory located seventy-six miles northwest of Chicago at Chemung, in McHenry County, in the State of Illinois; that said plant, equipment and pasteurization process have been approved by the State of Illinois and permit issued to the plaintiff on November 17, 1938, and on January 18, 1939 renewed by the State of Illinois under which plaintiff now pasteurizes, bottles, packs and packages its milk and milk products for sale as aforesaid; that milk and milk products sold by the
2220 plaintiff are pasteurized, bottled, packed, packaged and sealed by plaintiff at Chemung, Illinois, at the plant aforesaid, in single service containers known and described as "Pure-Pak" which containers are of non-absorbent material; that milk of Grade A quality, whipping and coffee cream, buttermilk, sour cream and chocolate milk are sold by the plaintiff in the cities and villages aforesaid; that a true sample of said single service "Pure-Pak" quart container of non-absorbent material in which said milk is bottled, packaged, sealed and sold to the public is filed with this Complaint with the Clerk of this Court and marked Exhibit "A" for identification and made a part of this Complaint by reference thereto. Plaintiff alleges that all statements written on said container above referred to are true in substance and in fact with regard to measurement, packaging, pasteurization, sealing, quality of contents and place of packaging; that said container above described is sterile, sanitary and made of non-absorbent material, in every respect with regard to manufacture, packaging, sealing, quality of virgin spruce material, and all other materials used and entering into the manufacture of said container and in its sale containing milk and milk products, complies with all ordinances and the rules and regulations of the Board of Health of the City of Chicago.

5. Plaintiff attaches to and incorporates in this Complaint, a true copy of the ordinance of the City of Chicago, known as "Mayor Kelly Milk Ordinance, Passed by the City Council January 4, 1935 and adopted January 8, 1935,"
2221 together with all amendments thereto now in full force and effect "for the establishment of standards and requirements for milk and milk products" by said City of Chicago and incorporates the same said ordinance as a part of this Complaint by reference thereto and said ordinance is identified as Exhibit "B."

6. Plaintiff further alleges that said "Pure-Pak" non-absorbent single service container excels all other milk con-

tainers in and for the protection of human life and for the preservation and protection of public health in the City of Chicago; that it is more economical to use and easy of handling in the use and sale and distribution of Grade A milk and milk products to the retail trade in said City than metal and glass containers; and plaintiff further alleges that said containers used by it daily contain true and correct measure and true and correct quality and quantity of milk and milk products contained therein, and that said same measure, quality and quantity are identified and recited clearly on the sides of said container.

7. Plaintiff further alleges that the machinery and equipment used by it in the bottling, packaging, sealing and pasteurization of milk and milk products sold by it in the "Pure-Pak" single service, sterile, sanitary and non-absorbent container are such as to prevent any part of any person or his or her clothing from coming in contact with any surface with which milk or milk products come in contact with in said process aforesaid; that said automatic machinery used in said process of bottling, sealing and packaging of said milk is of a design which does not
2222 require frequent adjustment during operation so as to expose milk to the danger of contamination and all parts of said machinery and equipment can be readily cleaned and are of such construction as to prevent any contamination reaching the inside of the bottler or any part of said equipment; that all surfaces with which milk comes in contact are of smooth, not readily corrodible material and the same are very accessible for cleaning; that the sealing of milk and milk products bottled and packaged and sealed in said "Pure-Pak" container is done by said same automatic machinery and not by hand; that all employees coming in contact with the milk, milk products and containers aforesaid, including the equipment, wear clean outer garments and maintain cleanliness at all times while engaged in the bottling, packaging, sealing and pasteurization of said milk and milk products sold by the plaintiff; that all vehicles used by the plaintiff for the transportation of milk or milk products are completely enclosed and so constructed and operated as to protect the milk or milk products from the sun and freezing and from contamination; that said vehicles are kept clean at all times and no substance capable of contaminating milk or milk products is transported with milk or milk products in any such manner so as to permit contamination to exist. Plaintiff

further alleges that all said vehicles used by it in the distribution of milk or milk products bear its name as distributor prominently displayed thereon.

8. Plaintiff further alleges that the milk plant and receiving station at Chemung, Illinois, where its milk
2223 and milk products are bottled, packaged, sealed, pasteurized and made ready for sale has been inspected and approved by the Board of Health of the City of Chicago, for the sale of Grade A milk and cream in the City of Chicago at wholesale; that said approval exists at this time and permit for the sale of said milk and milk products from said plant, and of said plant is shown by Permit Number 1521 for said milk receiving station described therein; that said permit was issued by said above Board of Health and is in full force and effect at this time and has been extended to the plaintiff herein by the Board of Health of the City of Chicago, and said plant is being daily operated in conformity with all the rules and regulations of the Board of Health of the City of Chicago and all the provisions of said ordinance of said City therein described; that under said permit, thousands of gallons of milk and milk products are now being sold daily in the City of Chicago.

9. Plaintiff further alleges that in excess of one million "Pure-Pak" single service non-absorbent containers are being used daily throughout the cities and villages in the United States, by and with the consent of their respective boards of health and health commissioners, in the sale of milk and milk products; that plaintiff at this time, is delivering milk and milk products in said same above described containers to several hundred consumers and to retail dealers daily in said cities and villages heretofore described and set forth in Paragraph Two of this Complaint; that said volume of business is in excess of Six Thousand Dollars ($6,000.00) per month at the present time
2224 and said milk and milk products are being sold from and distributed in twelve sanitary refrigerated one and a half ton milk trucks, manufactured by International Harvester Company, and said trucks in every respect comply with all the rules and regulations of the Board of Health of the City of Chicago and the provisions of the ordinance hereinabove described in this Complaint.

10. Plaintiff further alleges that said above described containers are standard milk bottles and standard milk containers; are used daily in large quantities of a million in the following cities in the United States: Detroit, Cleve-

land, Washington, D. C., Toledo, Pittsburgh, Philadelphia, Harrisburg, Pa., New York City, Baltimore, Trenton, N. J., Ardmore, Pa., Boston, Jersey City, N. J., San Francisco, City of Superior, Wis., City of Wilmington, Del., Town of Montclair, N. J., and numerous other large cities; that said use of said "Pure-Pak" container in said cities and states is, and has at all times been, by and with the consent and approval of the respective boards of health of said cities and states; that said use in said cities and states has been approved and permitted for several years past and the same has been and is now without the slightest prejudice or danger to the health of the millions of users, and the millions of purchasers and consumers of milk and milk products sold in said "Pure-Pak" containers in the cities and states aforesaid; that said sales and transactions in said cities and states aforesaid and throughout the United States amount to more than One Hundred Thousand Dollars ($100,000.00) per day and the money and property
2225 used and invested in said same machinery and equipment used in the bottling, packaging, sealing and pasteurization of milk sold in "Pure-Pak" non-absorbent single service containers amounts to approximately Five Hundred Thousand ($500,000.00) Dollars.

11. That said above described containers are standard milk containers and are excellent for their use from a sanitary standpoint; that they are safe and sterile and prevent multiplicity of handling and use of the same container again; they are light for handling and safe and sanitary in sealing, pouring and in the retention of milk for use and consumption from day to day; that said container fully complies with the rules and regulations of the Board of Health of the City of Chicago and the provisions of said ordinance described with regard to sealing, non-absorbent material, pasteurization and all other provisions and sections of said ordinance dealing with the handling and sale of milk and milk products at retail in the City of Chicago in quantities of less than one gallon; that plaintiff's place of business, its vehicles, methods and equipment used in the sale of milk and milk products are in every respect sanitary and fit for the uses and purposes of selling milk and milk products to the public in the City of Chicago; that the same comply with the provisions of the ordinance of the City of Chicago, described above, and the rules and regulations of the Board of Health of the City of Chicago at this time.

12. Plaintiff alleges that on January 11th, May 27th and June 2nd, 1937, requests and applications were made
2226 to the President of and to the Board of Health of the City of Chicago for and on behalf of plaintiff for permission and license under said ordinance, licensing and allowing plaintiff to sell or offer for sale, expose for sale, dispose of, exchange, or deliver, milk, or milk products for human consumption in said "Pure-Pak" non-absorbent single service container; that said request and application was made in writing on the days aforesaid and with it, substantial and considerable statistical data from responsible and recognized authorities on the subject, after due search and investigation, with regard to the safety and sanitary sterile and non-absorbent quality of said container and the same was submitted to and filed with the Board of Health of the City of Chicago for study, consideration, examination and analysis so that said license and permit to sell milk and milk products might be issued to the plaintiff by the aforesaid Board of Health; that application and request on behalf of plaintiff was made to and of the Board of Health of the City of Chicago on January 23, 1939, for license and permission to be issued to the plaintiff for the sale of Grade A milk and milk products at wholesale in the City of Chicago from the plant hereinabove described; that on the 23rd day of January, 1939, plaintiff made request of and application to the Board of Health of the City of Chicago for a license or permit to sell milk of Grade A quality together with milk products in the City of Chicago and said application and request was made pursuant to and in conformity with all the provisions of
2227 the ordinances of the City of Chicago and the rules and regulations of the Board of Health and the provisions of said "Mayor Kelly Milk Ordinance"; that plaintiff delivered with said application a check in the amount of $60.00 payable to the City Collector of the City of Chicago for said license and for use of its twelve trucks to be used in the sale and distribution of milk by plaintiff in said containers in the City of Chicago; that plaintiff tendered submission of any and all other information and data necessary and required or requested by the Board of Health of the City of Chicago for the issuance of said permit and license in order to be entitled to a permit or license under said ordinance and the rules and regulations of the Board of Health for the sale of Grade A milk and milk products in said container in the City of Chicago; and plaintiff now

stands, and has for a year past stood ready to furnish any and all further information and data requested or required by said Board of Health and to satisfy it that plaintiff is qualified and entitled to use said container in the City of Chicago; and plaintiff further alleges that to said request and applications aforesaid, plaintiff has not to date received said license or permit from the Board of Health of the City of Chicago, or the Health Commissioner of the City of Chicago.

13. Plaintiff further alleges that it can now sell Grade A milk and milk products in said container in the City of Chicago at this time to retail stores for consumers of milk and milk products and plaintiff is now ready, willing
2228 and able, and desirous of using said containers in said City for the sale of Grade A milk and milk products in said container to a large number of stores and retail dealers and to the consumer public; that certain milk distributors are desirous and ready to contract with plaintiff to buy from plaintiff milk and milk products in said container at Eight Cents ($.08) per quart; that the Board of Health of the City of Chicago, by Dr. Robert A. Black, acting Health Commissioner of the City of Chicago, after request was again made, verbally refused permission and consent to use said container in the City of Chicago on January 5, 1939; that said defendants above described continue to deny and refuse plaintiff permission to use said container; that said refusal is arbitrary, capricious, unreasonable and unlawful, and as a result thereof, causes substantial financial damage to the plaintiff daily; and also does other irreparable injury to the plaintiff in an amount of and in excess of Three Thousand Dollars ($3,000.00) at this time; and said damages continue to increase daily with said refusal.

14. Plaintiff further alleges that on the 5th day of November, 1936, request and application was made to the Board of Health of the City of Chicago, under the provisions of said ordinance for a license and permission to sell Grade A milk and milk products to be issued to plaintiff so that plaintiff would be permitted to use said "Pure-Pak" non-absorbent single service containers in the sale and distribution of Grade A milk and milk products in the City of Chicago; that on May 14, 1937 and to this
2229 date plaintiff has been refused or denied a permit for its use and said denial continues daily; that said denial and refusal is, under the provisions of said ordi-

nance and the rules and regulations of said Board of Health with regard to the distribution and sale of milk and milk products by plaintiff in the City of Chicago, unreasonable, capricious, discriminatory, invalid and in violation of the provisions of the Constitution of the State of Illinois and the provisions of the Constitution of the United States of America; that said refusal of said permit and license to the plaintiff by the Board of Health of the City of Chicago at this time is unlawful, unreasonable, capricious and without any basis from a health and sanitary standpoint under the provisions of said ordinance and the rules and regulations of the Board of Health; that said refusal has, and does irreparable damage to the plaintiff daily and has resulted in substantial damages and results in the taking of plaintiff's property without due process of law, to great damage of the plaintiff in the loss of sales, profits, trade, customers, valuable contracts, and the loss of gains from the sale of milk and milk products in said City of Chicago daily.

15. Plaintiff further alleges that it verily believes that its use of the "Pure-Pak" non-absorbent single service container in the City of Chicago without said permit or permission from the defendants will result in resistance and interference by the said defendants; and plaintiff verily believes that it will be prosecuted in courts of competent jurisdiction and that it will be otherwise harassed, annoyed, interfered with and resisted by said re-
2230 spondents if said container is used in this City, as aforesaid, without permission being first given by said defendants; and plaintiff further says that said interference will result in the loss of large sums of money to the plaintiff daily; and do other irreparable injury and much damage to plaintiff's business.

16. Plaintiff further alleges that said container is used daily by and with the consent of the State Department of Public Health of the State of Illinois; that said container complied with all the pertinent and relevant provisions of the statutes of the State of Illinois with regard to all sanitary and health measures now in force for the protection and preservation of public health and for the promotion of the general welfare of the residents of the State of Illinois.

17. Plaintiff further alleges that said hereinbefore described "Pure-Pak" containers are now used daily by

twenty-four approved milk and dairy plants in approximately two hundred municipalities in the United States of America; that several of these said milk plants are operating under the provisions and rules and regulations of the United States Public Health Service Standard Milk Ordinance, similar in substance to the ordinance and rules and regulations of the City of Chicago and Board of Health of the City of Chicago; that the operations of the plaintiff in the sale and distribution of Grade A milk and milk products in said containers outside of the City of Chicago have been approved by the State Department of Public Health of Illinois and said operations given a rating of over ninety percent. (90%), which rating exists at this time.

2231 18. Plaintiff further alleges that said described conduct of the defendants in this controversy is discriminatory, unreasonable, unlawful and prejudicial to the plaintiff without any just cause in fact or in law; and said conduct results in daily irreparable damage to the plaintiff and deprives the plaintiff of the equal protection of the laws in violation of the Fourteenth Amendment to the Constitution of the United States and Section Two of Article Two of the Constitution of the State of Illinois, and Section Thirteen of Article Two of the Constitution of the State of Illinois; and said acts of the defendants in this controversy deprive the plaintiff of its property without due process of law.

19. Plaintiff states that in and by the provisions of said "Mayor Kelly Milk Ordinance of the City of Chicago" hereinabove referred to and incorporated in this Complaint by reference thereto and attached as Exhibit "B" it is provided in part as follows:

"3090. Labeling and Placarding. All bottles, cans, packages, and other containers enclosing milk or any milk product defined in this ordinance shall be plainly marked or labeled with the following and only such other information as may be designated by the board of health:

1. The name of the contents as given in the definitions in this ordinance.

2. The word "pasteurized" only if the contents have been pasteurized.

3. The word "raw" only if the contents are raw.

4. The name and address of the producer if the contents are raw, and the name and address of the plant at

which the contents were pasteurized if the contents were pasteurized.

2232 5. In the case of vitamin D milk, the designation "vitamin D milk," and such other information as may be required by the board of health.

6. The permit number.

7. On all cans, bottles and other containers of pasteurized or certified milk, the words "to be sold" and thereafter the day of the week on which the milk or milk product is to be sold to the final consumer, the height of the letters of the day of the week to be not less than 3/16 inch on bottle caps, and not less than 5/8 inch on tags attached to each container when contained in cans.

8. On all cans and other containers of milk and milk products received by pasteurization plants from receiving stations, the day of the week received by the receiving station.

9. The word "milk" shall not appear or be used on any label, cap, receptacle, or container for any products except those defined in this article as milk, skimmed milk, buttermilk, cultered buttermilk, vitamin D milk, and any other products designated by the board of health."

20. Plaintiff further alleges that the pertinent regulations of the Board of Health of the City of Chicago under said ordinance concerning this controversy are as follows:

"All caps or labels on cans, bottles and other containers of pasteurized milk, cream and skimmed milk shall include the words "before noon" after the words "to be sold."

"A proof-print or sketch of the bottle cap or cover, or of the can tags and labels showing the size and arrangement of the lettering thereon, shall be submitted and approved by the board of health.

"When milk or milk products are enclosed in bottles or glass jars, the name or address blown into such bottle or glass jar, or otherwise indicated thereon, shall not be other than or different from that which is indicated on the cover or cap thereof."

2233 21. Plaintiff further alleges that in and by Section 3094 of said ordinance, it is provided as follows:

"* * * any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, res-

taurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the Board of Health * * *."

22. Plaintiff states that a footnote to this said section prepared by the Board of Health and published with said ordinance provides with respect to the purpose of using the standard milk bottle:

"The use of standard milk bottles for delivering milk and milk products in quantities less than one gallon is required in order to prohibit delivery in such containers as buckets, fruit jars, etc. which may be difficult to wash and to subject to adequate bactericidal treatment, which cannot be filled and capped with the proper equipment used for these purposes, and which it is often difficult to label properly."

23. Plaintiff alleges that the provisions of said ordinance do not prohibit the use of the "Pure-Pak" non-absorbent single service container hereinabove described; that no rule and regulation of the Board of Health prohibits the use of said container and the denial by the defendants of permission and license to the plaintiff to use said above described container is unreasonable, arbitrary, discriminatory and unlawful, and without any basis under the provisions of said ordinance and the discretion therein permitted to the Health Commissioner of the City of Chicago under the provisions of said ordinance with regard to the approval or disapproval of the milk container
2234 to be used in the sale of milk and milk products in the City of Chicago, is invalid, unlawful and capricious, and results in discrimination at will, whim or caprice and without good cause or merit so as to prejudice plaintiff and to deprive the citizens and milk consumers of the City of Chicago of the right and opportunity to purchase and receive milk of Grade A quality and milk products in sanitary, sterile bottles or "Pure-Pak" containers at a price equalling that charged for milk of the same quality and quantity sold in glass containers or other packages at retail, in restaurants, hotels, and other dispensers of food and food products in the City of Chicago; that said ordinance contains no definition of a "standard milk bottle" as used in said sections and paragraphs nor do any footnotes and explanations of the sections and provisions of said ordinance describe in any form or manner, or in detail, what a "standard milk bottle" is, its shape, size,

or the material out of which said receptacle must be made; that said ordinance with regard to its restrictions and prohibitions, if any exist, against the use of "Pure-Pak" non-absorbent single service containers in the City of Chicago is unconstitutional and invalid and results in the depriving of plaintiff of due process of law and equal protection of the laws contrary to the aforesaid Amendment to the Constitution of the United States; Section Two, Article Two of the Constitution of the State of Illinois, and Section Thirteen, Article Two of the Constitution of the State of Illinois; that said ordinance as applied to plaintiff's
2235 use of "Pure-Pak" non-absorbent single service containers and their prohibition in the use and sale, or offer for sale, of milk and milk products in the City of Chicago, amount to the taking and damaging of the property of plaintiff without just compensation in violation of Section Thirteen, of Article Two of the Constitution of the State of Illinois, and said classification and discrimination is void.

Wherefore, plaintiff prays:

1. That this Honorable Court enter a declaratory judgment in this controversy construing the law as to certain acts of defendants described herein and finding that:

(a) Said ordinances herein described, and all the rules and regulations of the Board of Health of the City of Chicago do not prohibit and prevent plaintiff from using said "Pure-Pak" non-absorbent single service container in the City of Chicago for the sale of Grade A milk and milk products; or to further declare that the use of said above container in the City of Chicago is not contrary to or in violation of said "Mayor Kelly Milk Ordinance" or any other ordinance and the rules and regulations of the Board of Health of the City of Chicago.

(b) Or, to declare or decree that said ordinances of the City of Chicago and the rules and regulations of the Board of Health, in so far as they attempt to deny and prohibit and apply to the plaintiff in its use of said single service container above described, are invalid, unreasonable and
discriminatory and unconstitutional and of no
2236 force and effect with regard to prohibiting the use of said above container by plaintiff in the City of Chicago in its sale of Grade A milk and milk products.

2. And plaintiff further prays that it be awarded a

writ of injunction, restraining the defendants herein from in any form or manner prohibiting and interfering with the plaintiff in the use of said "Pure-Pak" non-absorbent single service container in the sale of Grade A milk and milk products in the City of Chicago.

3. That plaintiff be awarded all other relief in the premises necessary and proper and in accordance with law, equity and good conscience concerning its present and future use of said container; and concerning and with regard to all health ordinances of the City of Chicago and said "Mayor Kelly Milk Ordinance" and the rules and regulations of the Board of Health of the City of Chicago; that the defendants herein and each of them be ruled to plead or answer this Complaint at a short date to be determined by this Court (and as is provided by the rules of this Court) and that upon issues being joined on said pleadings in this controversy, and all motions therein, the same be set down by this Court for early hearing and disposition; and further that all other orders be entered in this cause with regard to any early disposition of this controversy, as is by rule of this Court now provided.

Fieldcrest Dairies, (Inc.),
Plaintiff.
By: S. E. Dean, Jr.,
Duly Authorized Agent and President.

Gariepy & Gariepy,
By Fred A. Gariepy,
Matthews, Kaleth & Shapiro,
By Thos. A. Matthews,
Attorneys for Plaintiff.

2237 State of Illinois, }
County of Cook, } ss.

S. E. Dean, Jr., on oath deposes and says that he is the duly authorized agent and officer of Fieldcrest Dairies, (Inc.); that he has read said Complaint above by him subscribed and knows the contents of the same; that said Complaint is true in substance and in fact; that as to said allegations with regard to information and belief therein stated, affiant says that he believes the same are true.

S. E. Dean, Jr.,
Affiant.

Subscribed and Sworn to before me, this 2nd day of February, 1939.

William Jacobs,
(Seal) *Notary Public.*

Endorsed: Filed Feb-2 1939 at 9:47 o'clock A. M. Hoyt King Clerk.

Plaintiff's Exhibit "[redacted]" attached to complaint is omitted at this point as it appears in the record as Exhibit A attached to the Defendant's Answer.

Filed Feb. 27, 1939.

2240 And on, to-wit, the 27th day of February, A. D. 1939, came the Defendants by their atttorneys and filed in the Clerk's Court of said Court their certain Answer, in words and figures following, to-wit:

2241 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

ANSWER.

The defendants, the City of Chicago, the members of the Board of Health of the City of Chicago, and Dr. Robert A. Black, Acting President of the Board of Health of the City of Chicago, by Barnet Hodes, Corporation Counsel, and Walter V. Schaefer and Charles P. Horan, Assistant Corporation Counsel, their attorneys, answering the complaint in this case say:

1. The City of Chicago has a population of approximately three and one-half million. During the year 1937 an approximate daily average of 277,000 gallons of milk were sold for consumption in the City of Chicago. During the same period an approximate daily average of 27,500 gallons of cream and 20,750 gallons of milk products, such as buttermilk and chocolate milk, were sold for consumption in the city.

2. Milk, when properly produced, processed and handled, is the most nearly perfect human food. There is no article of human food more generally used than milk. Pure milk is an indispensable item in the diet of infants and children, and it is likewise an important con-

2242 stituent part of the diet of most invalids, and the aged and infirm. Far more milk is consumed by in-

fants and children than is consumed by all of the other age groups in the population combined.

3. Although milk is an excellent human food, it is also an excellent medium for the growth and transmission of bacteria. The precise factors which make milk an ideal food for human beings of all ages also make milk a perfect food for bacteria.

4. Statistics collected by the United State Public Health Service show that during the decade ending with the year 1934, there was in the United States an annual average of 43 reported epidemics causing widespread illness and numerous deaths which have been traced directly to improper milk supplies. Most of these outbreaks have been typoid fever epidemics, but unwholesome milk has also caused epidemics of septic sore throat, diphtheria, scarlet fever, dysentery and poliomyelitis. Impure milk supplies have also resulted in the spread of bone and glanduler tuberculosis and infantile diarrhea, as well as in the spreading of diseases of an epidemic nature.

5. Because of the grave menace to the health of the public generally which is inherent in an impure milk supply, and also because of the extreme susceptibility of infants and children, who are the principal consumers of milk, to the presence of disease organisms, impurities, adulterants and foreign substances of all types in milk, the maintenance of a pure and wholesome milk supply is one of the principal concerns of municipal government, and has long been so recognized.

6. The United States Public Health Service has manifested its recognition of the relation of pure and wholesome municipal milk supplies to the national public health by the establishment of a division to render assistance to municipalities in formulating and enforcing regulations concerning the production, processing and distribution
of milk, and in recent years the United States Public
2243 Health Service has formulated its "United States Public Health Service Standard Milk Ordinance and Code," and has actively urged the adoption of the ordinance and regulations which it formulated, or of legislation containing equivalent public health safeguards, by municipalities throughout the country.

7. The health of the public cannot adequately be protected against the hazards of an impure milk supply unless every step in the production, processing and distribu-

tion of milk is carefully safeguarded in such a manner that disease organisms present in milk are eliminated, and the possibility of the introduction of disease organisms, impurities, adulterants, or any foreign substances into milk is prevented during its production, processing and distribution.

8. Tuberculin tests for cattle are required in the State of Illinois and almost uniformly throughout the country. The plant and equipment of the farmer who produces milk for consumption in fluid form, as well as the plant and equipment of each person subsequently handling such milk during the course of its processing and distribution, are regulated with a view to preventing the possibility of the contamination or adulteration of milk.

9. The General Assembly of the State of Illinois has conferred authority upon the City of Chicago:

"To do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease." (Ill. Rev. Stat. 1937, Ch. 24, Par. 65, 77.)

10. In the exercise of the powers conferred upon it by the General Assembly for the protection of the health of the inhabitants of the City, the City of Chicago and its Board of Health have adopted an ordinance and rules and regulations pertaining to the production, processing and distribution of milk, a copy of which ordinance and rules and regulations is attached hereto and marked Exhibit "A."

2244 11. The ordinance and the regulations of the city concerning the production, processing and distribution of milk cover every phase of the handling of milk from the cow to the consumer because improper handling of milk in the distribution thereof can and will nullify the effect of sanitary production and processing. Included in the ordinance and regulations of the City of Chicago are the provesions assailed by the plaintiff in this case, which are as follows:

"* * * Any milk or milk products sold in quanties of less than one gallon shall be delivered in standard milk bottles: * * *" (Revised Chicago Code of 1931, as amended, Section 3094.)

* * * * *

"Item 10p.—Construction and Repair of Equipment and Containers.

All equipment and containers with which milk or milk products come in contact shall be constructed in such manner as to be easily cleaned and shall be kept in good repair.

* * * * *

Satisfactory compliance.—This items shall be deemed to have been satisfied if:

(1) All surfaces with which milk comes in contact consist of smooth, not readily corrodible metal or unbroken vitreous material, and

(2) All joints are soldered flush with the surface or otherwise fitted to avoid open seams, or the surface, if vitreous, is continuous, and

(3) All surfaces with which milk or milk products come in contact are easily accessible for cleaning, and are self-draining, annd

(4) All containers and other equipment are in good repair, free of breaks and corroded places, and

(5) All equipment and containers used are approved by the board of health. * * *" (Item 10p. of regulations of board of health supplementing Section 3093 of the Revised Chicago Code of 1931, as amended.)

12. The use of paper containers for the distribution of milk is a relatively recent development. Only within the past five years has the paper manufacturing industry become aware of the existence of public health problems in connection with the use of paper containers for articles of food and drink. The attention of the paper industry has been devoted primarily to securing favorable consumer reaction to its products, and has been devoted in only a secondary sense, and in very recent years, to the public health problems inherent to the use of paper containers.

2245 13. The Board of Health for the City of Chicago has carefully watched developments in the field of production of paper containers for milk and milk products and has investigated the merits of all types of paper containers from a public health point of view. The defendants are informed and verily believe that no paper container for fluid milk and milk products has so far been developed which is sterile, non-absorbent or sanitary. The defendants allege as a fact that the so-called "Pure-Pak" container is neither non-absorbent nor sterile, nor is it

a sanitary container for the distribution of milk and milk products. No permit has been issued by the Board of Health of the City of Chicago for the use of the so-called "Pure-Pak" container, or any other type of paper container for the distribution of milk or milk products in the City of Chicago. No paper container has ever been used for the distribution of milk or milk products in the City of Chicago.

14. The refusal of the Board of Health to permit the use of paper containers for the distribution of milk and milk products in the City of Chicago has been in the performance of its duty to protect the health of the inhabitants of the City of Chicago, and has been pursuant to the ordinances of the City of Chicago and the rules and regulations of the Board of Health. It has in no sense been arbitrary, capricious, unlawful or discriminatory.

15. The defendants admit that the plaintiff is distributing milk and milk products in so-called "Pure-Pak" containers in some of the suburban communities in the vicinity of Chicago. The defendants also admit that the Board of Health has issued Permit No. 1521 to the plaintiff for the operation of a milk receiving station at Chemung, Illinois; but deny the allegations of paragraph eight of the complaint that said milk receiving station has been inspected and approved by the Board of Health for the sale of Grade "A" milk and cream at wholesale in the City of Chicago. The defendants specifically deny that the Board of Health of the City of Chicago has inspected and
2246 approved the pasteurization plant of the plaintiff at Chemung, Illinois, and allege that no milk or milk products pasteurized in said milk receiving station are being sold or may lawfully be sold in the City of Chicago.

16. The defendants have no knowledge or information sufficient to form a belief as to the truth of the following allegations of the complaint:

(a) As to the allegations of paragraph one concerning the corporate organization of the plaintiff.

(b) As to the allegations of paragraph two concerning the amount in the controversy and the alleged expenditures of the plaintiff.

(c) As to the allegations of paragraph three concerning the objects of incorporation of the plaintiff.

(d) As to the allegations of paragraphs three, nine, ten and seventeen concerning the use of so-called "Pure-

Pak" containers in certain specified cities and compliance with the applicable health regulations of said cities.

(e) As to the allegations of paragraphs nine and ten of the complaint concerning the financial volume of the business done by the plaintiff and others in the distribution of milk and milk products in the so-called "Pure-Pak" containers, and concerning the amount of money invested in equipment for making said containers.

(f) As to the allegations of paragraph thirteen of the complaint concerning the financial injury alleged to result to the plainttiff because of the defendant's refusal to permit the use of so-called "Pure-Pak" containers for the distribution of milk and milk products in Chicago.

(g) As to the allegations of paragraph sixteen concerning the consent of the Department of Public Health of the State of Illinois as to the use of said so-called "Pure-Pak" containers.

2247 17. The defendants have no knowledge or information sufficient to form a belief as to the truth of the allegations of paragraph four of the complaint concerning the issuance and renewal of a permit for the pasteurization plant of the plaintiff by the State of Illinois; but defendants allege that the issuance or the renewal of such a permit has no bearing upon the legal right of the plaintiff to sell milk pasteurized at said plant within the City of Chicago.

18. With respect to the allegations of paragraph seven of the complaint defendants deny that the paper from which the so-called "Pure-Pak" containers are made, the method of manufacturing and processing said paper, and the machinery and process employed in forming and filling said containers are such as will adequately protect the public health when such containers are used for the delivery of milk.

19. The defendants deny the allegations of paragraph eleven of the complaint, and specifically deny that the so-called "Pure-Pak" container is a standard milk bottle or standard milk container.

20. With respect to the allegations of paragraph fifteen of the complaint the defendants admit that the ordinances of the City of Chicago and the rules and regulations of the Board of Health of the City of Chicago pertaining to the production, processing and distribution of milk, will be enforced, and that the violation of said ordinances will be prosecuted. The defendants have no knowledge or informa-

tion sufficient to form a belief as to the truth of the other allegations of paragraph fifteen.

21. The use of paper containers, including the so-called "Pure-Pak" container, for the distribution of milk and milk products in the City of Chicago is prohibited by the ordinances of the City and the rules and regulations
2248 of the Board of Health. Said prohibition is a proper exercise of powers validly conferred upon the City by the General Assembly of the State of Illinois for the protection of the public health of the inhabitants of the City; its enforcement deprives the plaintiff of no rights guaranteed to it by the Constitution of the United States or of the State of Illinois.

City of Chicago, a Municipal Corporation, the Board of Health of the City of Chicago, Robert A. Black, acting President of the Board of Health of the City of Chicago,
Defendants,

By Barnet Hodes,
Corporation Counsel,
Walter V. Schaefer,
Assistant Corporation Counsel of the City of Chicago,
Charles P. Horan,
Assistant Corporation Counsel of the City of Chicago,
Their Attorneys.

2249 **EXHIBIT "A".**

2250 **Reprint Of The**
Mayor Kelly Milk Ordinance
Passed by the City Council
January 4, 1935
and of the
Rules and Regulations
of the Chicago Board of Health
Adopted January 8, 1935
for the establishment of
Standards and Requirements
For Milk And Milk Products

(Cut)

City of Chicago
Edward J. Kelly, Mayor

Board of Health
Dr. Herman N. Bundesen, President
1933-1935

The City Council
Chicago
Honorable Edward J. Kelly, Mayor
Ald. J. M. Arvey, President Pro Tem.

Peter J. Brady
City Clerk

Edw. J. Padden
Chief Clerk

1st Ward John J. Coughlin
2nd Ward William L. Dawson
3rd Ward Robert R. Jackson
4th Ward B. A. Cronson
5th Ward James J. Cusack, Jr.
6th Ward John F. Healy
7th Ward Thomas J. Daley
8th Ward David L. Sutton
9th Ward Arthur G. Lindell
10th Ward William A. Rowan
11th Ward Thomas A. Doyle
12th Ward Byran Hartnett
13th Ward John E. Egan

14th Ward James J. McDermott
15th Ward James F. Kovarik
16th Ward Terrence F. Moran
17th Ward Frank J. Corr
18th Ward Harry E. Perry
19th Ward O. E. Northrup
20th Ward William V. Pacelli
21st Ward John J. Lagodny
22nd Ward Henry Sonnenschien
23rd Ward John Toman
24th Ward J. M. Arvey
25th Ward James B. Bowler
26th Ward Frank E. Konkowski
27th Ward Harry L. Sain
28th Ward George D. Kells
29th Ward Thomas J. Terrell
30th Ward John S. Clark
31st Ward Thomas P. Keane
32nd Ward Joseph P. Rostenkowski
33rd Ward Z. H. Kadow
34th Ward Matt Porten
35th Ward Walter J. Orlikoski
36th Ward George W. Robinson
37th Ward Roger J. Kiley
38th Ward Henry J. Wieland
39th Ward James J. Hurley
40th Ward Joseph C. Ross
41st Ward James C. Moreland
42nd Ward Dorsey R. Crowe
43rd Ward Mathias Bauler
44th Ward John J. Grealis
45th Ward Edwin F. Meyer
46th Ward Oscar F. Nelson
47th Ward Albert F. Schulz
48th Ward John A. Massen
49th Ward George A. Williston
50th Ward James R. Quinn

Committee on Health

Terrell, Chairman; Ross, Vice-Chairman; Sutton, Egan, Moran, Northrup, Kells, Orlikoski, Robinson, Kiley, Wieland, Moreland, Meyer, Schulz, Williston, Arvey (ex officio).

Board of Health

Dr. Herman N. Bundesen, President; Dr. Louis E. Schmidt, Secretary; Dr. Francis A. Dulak, Prof. Edwin O. Jordan, Mr. Harry J. Reynolds, Members.

2251 Milk and Milk Products

Standards and Requirements

Section

3082. Definitions.
3083. Sale of adulterated and misbranded milk or milk products prohibited.
3084. Permit to sell—vehicles to bear permit number—revocation of permit—hearing.
3085. Sale of milk or milk products—license required.
3086. Application—separate license for each place of business—change of location.
3087. License fees.
3088. Vehiclues to display license emblem on windshield.
3089. Revocation of license.
3090. Labeling and placarding.
3091. Inspection of dairy farms and milk plants, report to be posted.
3092. Examination of samples.
3093. Kinds of milk—requirements.
3094. Dipping—delivery containers—delivery at quarantined places.
3095. Products shipped from beyond limits.
3096. Notification of disease.
3097. Suspicion of infection—procedure.
3098. Limit of time of sale.
3099. Penalty.

(For purposes of explanation:

The ordinance is printed in heavy-face type as used in this sentence.

The rules and regulations are printed in light-face type as used in this sentence.

The public health reasons are printed in smaller light-face type as used in this sentence.)

3082. Definitions.) The following definitions shall apply in the interpretation and the enforcement of this article:

(A) Milk. Milk is hereby defined to be the lacteal secretion obtained by the complete milking of one or more healthy cows, excluding that obtained within fifteen days before and five days after calving, or such longer period as may be necessary to render the milk practically colostrum free, which contains not less than eight and one-half per cent. of milk solids-not-fat, and not less than three and one-fourth per cent of milk fat.

Public health reason.—The food value of milk depends upon its solids-not-fat and its milk-fat content (which, in turn, determine the content of proteins, carbohydrates, minerals and certain vitamins). If either of these is reduced below the range for normal market milk, the food value is reduced. Practical experience shows that three and one-fourth per cent milk fat and eight and one-half per cent solids-not-fat are reasonable minima for mixed-herd milk. Colostrum tends to produce intestinal disturbances in children, and milk is apt to contain colostrum if obtained within fifteen days before or five days after calving.

Satisfactory compliance.—This definition shall be deemed to have been satisfied:

(1) When there is no evidence that cows are milked within fifteen days before or five days after calving, and when no colostrum can be detected in the milk.

(2) When the milk-fat content, as determined by the Babcock, Mojonnier, or other recognized test, is three and one-fourth per cent or more.

(3) When the milk solids-not-fat content is eight and one-half per cent or more, as determined from the milk-fat percentage and the specific gravity, or by other approved methods, provided that failure to satisfy this requirement shall be regarded as merely presumptive evidence of watering, and that this evidence shall be confirmed by cryoscope, refractometer, or other approved test for added water.

(4) When the milk is clean, free of sediment, and has a normal flavor, odor and appearance.

(5) When the milk comes from cows which have been properly fed.

(B) Milk Fat Or Butter Fat. Milk fat or butter fat is the fat of milk.

(C) Sweet Cream; Sour Cream. Sweet cream is a portion of milk which contains not less than eighteen per cent milk fat, and the acidity of which is not more than 0.20 2252 per cent, expressed as lactic acid. Sour cream is a portion of milk which contains not less than eighteen per cent milk fat, and the acidity of which is more than 0.20 per cent, expressed as lactic acid.

(D) Skimmed Milk. Skimmed milk is milk which has a milk fat content of less than three per cent.

(E) Milk Beverage Or Skimmed-Milk Beverage. A milk beverage or a skimmed-milk beverage is a food compound or confection consisting of milk or skimmed milk, as the case may be, to which has been added a syrup or flavor consisting of wholesome ingredients.

(F) Buttermilk. Buttermilk is the product which remains when fat is removed from milk or cream in the process of churning. It contains not less than eight and one-half per cent of milk solids-not-fat.

(G) Cultured Buttermilk. Cultured buttermilk is the product resulting from the souring of treatment, by a lactic acid culture, or other treatment approved by the board of health, of milk or milk products. It contains not less than eight and one-half per cent of milk solids-not-fat, and shall be pasteurized before adding the culture.

(H) Vitamin D. Milk. Vitamin D milk is milk the vitamin D content of which has been increased by a method and in an amount approved by the board of health.

(I) Reconstituted Or Recombined Milk and Cream. Reconstituted or recombined milk and cream are products resulting from the recombining of milk constituents with water or other combining substance in accordance with the rules and regulations of the board of health, and which comply with the standards for milk fat and solids-not-fat as defined herein.

All milke and milk products used in reconstituted or recombined milk and cream shall conform to the requirements set forth in the ordinance and rules and regulations of the board of health pertaining to milk and milk products.

No person shall reconstitute or recombine milk, or any milk products to be served or sold, without first obtaining the approval and permission of the board of health.

(J) Milk Products. Milk products shall be taken to

mean and include sweet cream, sour cream, vitamin D. milk, buttermilk, cultured buttermilk, skimmed milk, milk beverages, and skimmed-milk beverages, and such other products as may, from time to time, be designated by the board of health.

This item shall include all milk products which are used in the manufacture of ice-cream and other frozen confections of a similar nature, such as butter, milk powder, skimmed-milk powder, and cream powder, condensed, concentrated and evaporated milk and skimmed milk, and other milk products designated from time to time by the board of health.

(K) Pasteurization. The terms "pasteurization," "pasteurized," and similar terms shall be taken to refer to the process of heating every particle of milk or milk products to a temperature of not less than 144° F., and holding at such temperature for not less than 30 minutes in pasteurization apparatus approved by the board of health, provided that approval shall be limited to apparatus which requires a combined holder and indicating thermometer temperature tolerance of not more than 1½° F., as shown by official tests with suitable testing equipment, and provided that such apparatus shall be operated as directed by the board of health and so that the indicating thermometers and the recording thermometer charts both indicate a temperature of not less than 144° F., continuously throughout the holding period. Provided that nothing contained in this definition shall be construed as disbarring any other process which has been demonstrated as of at least equal efficiency and is approved by the board of health.*

(L) Adulterated Milk And Milk Products. Any milk or a milk product not conforming with the requirements of composition and sanitation required by this article, or to which any substance has been added, except as may be specifically permitted by the board of health, shall be deemed adulterated and misbranded.

Any milk or milk product shall be deemed to have been misbranded if it is not labeled in accordance with the requirements of Section 3090 of this article.

2253 (M) Milk Producer. A milk producer is any person who owns or controls one or more cows, a part or all of the milk or milk products from which is sold.

* For the discussion of the enforcement of this definition, see Section 3093, item 16p, Grade A Pasteurized Milk.

(N) Milk Distributor.. A milk distributor is any person who offers for sale, or sells, or delivers to another, any milk or milk products for human consumption.

(O) Dairy or Dairy Farm. A dairy or dairy farm is any place or premises where one or more cows are kept, a part or all of the milk or milk products from which is sold or delivered.

(P) Milk Plant and Milk Receiving Station. A milk plant is any place, or premises, or establishment where milk or milk products are collected, handled, processed, stored, bottled, pasteurized, or prepared for distribution. A milk receiving station is any place, premises, or establishment where milk is collected, handled, or processed preparatory to pasteurization elsewhere.

(Q) Board of Health. The term, "board of health," shall mean the board of health of the City of Chicago, or its authorized representative.

(R) Average Bacterial Plate Count, Average Reduction Time, and Average Cooling Temperature. Average bacterial plate count shall be taken to mean the logarithmic average of the bacterial plate counts of the last four consecutive samples, taken upon separate days. Average reduction time shall be taken to mean the arithmetic average of the reduction times of the last four consecutive samples, taken upon separate days. Average cooling temperature shall be taken to mean the arithmetic average of the temperatures of the last four consecutive samples, taken upon separate days.*

(S) Inspection Period. The inspection period shall be such period of time as the board of health may designate, within which compliance with this article and the rules and regulations of the board of health shall be determined for all milk and/or milk products, provided that the inspection period shall in no case exceed six months.

(T) Bactericide. The term "bactericide" shall be taken to mean any bactericidal substance or process approved by the board of health.

There are several bactericides which may be used in

* For a discussion of bacterial plate count and reduction time, see Section 3092 of these regulations. For a discussion of cooling temperature, see Section 3093, items 23r and 17p.

complying with this ordinance. These consist generally of calcium hypochlorite, sodium hypochlorite, or certain chloramine solutions.

Calcium hypochlorite.—Calcium hypochlorite (chlorinated lime) is a chemical compound used as a disinfectant.

A satisfactory method of preparation is to make a smooth, watery paste of 12 ounces of calcium hypochlorite, adding the water in very small quantities at first, and bringing the final volume of this stock solution to one gallon. This solution should be kept tightly stoppered in a cool, dark place. An earthenware or brown glass jug is a satisfactory container. One tablespoonful of this stock solution to each gallon of rinse water will make a solution of an effective strength, which will not be so strong as to injure hands or udders. A fresh stock solution should be made every ten days, and any old solution thrown away or used to deordorize privies, etc.

A highly concentrated calcium hypochlorite is available which is more stable and more soluble than ordinary chlorinated lime.

Sodium hypochlorite.—Solution of sodium hypochlorite are on the market under various trade names. These have usually been found to be as strong as the stock chlorinated lime solutions when prepared as above directed. Unless otherwise instructed by the inspector, these commercial preparations of sodium hypochlorite should be made up in the proportion of one tablespoonful per gallon of rinse water.*

Testing of Chlorine Solutions.

Every milk producer or distributor who uses a chlorine compound as a bactericide shall provide himself with a testing device described herein, or such other similar device approved by the board of health, for the determination of available chlorine. Chlorine solutions in use shall contain at least 50 parts per million of available chlorine, as shown by the following test. Where the chlorine 2254 solution is used as a spray, the excess solution which

* The above instructions assume that the strength secured will be roughtly one hundred parts per million or more. It is believed that, as a matter of precaution, no chlorine solution should be used after its strength has been reduced to less than 50 parts per million.

runs off or collects in the equipment shall contain at least 50 parts per million.*

The testing outfit consists of two test tubes approximately 7/16 inch by 4 inches, one of which contains orthotolidin. The other is fitted with a medicine dropper and is used for testing the chlorine solution. It is etched at the 2 c. c. and 5 c. c. levels so as to make possible the dilution of the solution to be tested to two-fifths of its original strength, thus diluting an original solution of 50 parts per million or more to one of 20 parts per million or more, which, as above stated, is the critical point for the formation of the precipitate when hypochlorites are tested.

Before any tests are made with the apparatus, the medicine dropper should be tested to determine whether it delivers drops of the proper size. To do this, simply count the number of drops required to fill to the first mark of the testing tube. If the number required lies between 30 and 50, the dropper is satisfactory. If not, discard it and secure one of the proper size.

Directions for the Chlorine Test.

(1) Rinse the testing tube and its dropper thoroughly with clean water.

(2) Fill the testing tube to the lower mark with the chlorine solution to be tested, using the dropper for this purpose. (Avoid including floating particles.)

(3) Fill to the second mark with clean water, using the dropper for this purpose.

(4) Add one drop of orthotolidin.

(5) Hold the upper part of the testing tube firmly with one hand and tap the lower end of it sharply 50 times with one or two fingers of the other hand.

(6) If, in the case of hypochlorites, reddish or brownish particles separate out within five minutes, the solution tested contains at least 50 p. p. m. of available chlorine.

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* This test has been devised by the Office of Milk Investigations of the United States Public Health Service and measures that part of the chlorine which is quickly available.

The test makes use of the fact that when the proper amount of orthotolidin is added to a chlorine solution containing 20 parts per million or more, a precipitate is formed, except that in the case of certain chloramines the solution becomes cloudy at chlorine concentrations having a two-minute bactericidal strength equivalent to at least the bactericidal strength of 20 parts per million of sodium hypochlorite.

If, in the case of certain chloramines, the solution becomes cloudy within five minutes, the solution tested has a bactericidal strength for a two-minute exposure equivalent to at least the bactericidal strength of 50 p. p. m. of sodium hypochlorite.**

Other bactericides.—The board of health will not permit the use of any other form of bactericide until it has satisfied itself by its own or other official tests that they are satisfactory for use in connection with milk handling, and that they are of adequate strength. Under no circumstances shall formaldehyde or other preservatives be used.

(U) Person. The word "person" shall mean "person, firm, corporation, or association."

(V) Goat Milk, Ewe Milk. Goat milk, ewe milk, are the fresh, clean, lacteal secretions, free from colostrum, obtained by the complete milking of healthy animals other than cows, properly fed and kept, and conform in name to the species of animal from which they are obtained, and shall comply with all of the requirements of this article and the rules and regulations of the board of health, with reference to pasteurized or certified milk, except for such modifications as the board of health may deem appropriate.

3083. The Sale of Adulterated or Misbranded Milk or Milk Products Prohibited.) No person shall produce, sell, offer, or expose for sale, or deliver, or have in possession with intent to sell or deliver, any milk or milk products, all or any part of which is ultimately delivered or consumed in the city of Chicago, which is adulterated or misbranded.

All milk and milk products, which do not comply with the requirements as set forth in the rules and regulations of the board of health and/or the ordinances of the City of Chicago, may be condemned, and the shipper, producer or distributor, in whose custody or possession said milk or milk products are at the time of condemnation, shall cause the same to be destroyed or returned to the producer or shipper thereof, within such time as may be designated by the board of health.

** In order to determine whether a certain commercial preparation is strong enough for dairy use when mixed as directed on the label, mix a portion as directed on the label, then dilute half and half, and test for 50 parts per million by means of the above-described test. If a precipitate appears, the directions upon the label may be approved. Otherwise, such larger quantity of the stock solution should be used by the dairyman as will give a satisfactory test.

If at the end of such time said milk or milk products have not been destroyed or returned, said milk or milk products shall be destroyed by the board of health, and the permit of the possessor revoked.

3084. Permit to Sell. Vehicles to Bear Permit Number —Revocation of Permit—Hearing.) It shall be unlawful for any person to bring into or receive into the city of Chicago, for sale, or to sell, or to offer for sale therein, or to have in storage where milk or milk products are sold or served, any milk or milk product defined in this 2255 article, who does not possess a permit from the board of health, and on whose vehicle there does not appear in a conspicuous place the name and address of the milk distributor and the permit number and such other identification in such manner as required by the board of health.

Such permit may be revoked by the board of health upon the violation by the permitee of any of the provisions of this article or of any of the rules and regulations of the board of health, or in any emergency when, in the judgment of the board of health, the milk or milk product handled by the permitee has or may become a public health menace, or in any case in which the permitee refuses the board of health the right of entrance to any dairy farm, milk plant, or vehicle, or other place where milk or milk products are kept or stored, for the purpose of inspection or the collection and examination of samples; provided that the permitee shall, after abiding by such revocation, upon request have the right of a hearing before the board of health.*

There shall appear upon each outer side of every vehicle used for the transportation of milk or milk products a notice containing the words, "board of health permit," and, immediately thereafter, the permit number of the distributor, in figures not less than three inches high and one and one-half inches wide; also the name and place of business of the distributor, and the word "milk" and/or the words "milk products" in a prominent place, and in letters not less than six inches high, and of such other dimensions as are approved by the board of health.

All milk and milk products distributors shall furnish

* This section permits the board of health to prosecute any persons who begin distributing milk without notifying said board, and thus without being inspected. The periodic inspection principle of the ordinance makes it unnecessary that the permit be renewed annually.

the board of health with the names and addresses of all itinerant milk and milk products vendors to whom milk is delivered, and with the names and addresses of all milk producers, plants and receiving stations supplying said distributors with milk or milk products.

3085. Sale of Milk or Milk Products—License Required.) No person shall sell or offer for sale, expose for sale, dispose of, exchange or deliver, or with the intent so to do have in his possession, care, custody or control, milk or milk products for human food, without having obtained a license for that purpose.

3086. Application—Separate License Required for Each Place of Business—Change of Location.) Any person desiring to be licensed, in accordance with and pursuant to the provisions of this article, shall make application in writing therefor to the board of health.

Such application shall conform to the general provisions of this article relating to applications for licenses, and the rules and regulations of the board of health, and shall state the name and address of the applicant and the location of the place at which it is desired or intended to carry on such business; it shall also contain a description of the business which is to be engaged in, the description and number of vehicles to be used by the applicant (if any), and such further information which may be required by the board of health.

The board of health, upon receipt of such application, shall investigate or cause to be investigated, the place of business described in such application, and the vehicles, methods and equipment intended to be used by such applicant.

If such applicant, the place of business, and such vehicles, methods and equipment are found by said board of health to be in a sanitary condition and fit for the uses and purposes to which they are intended to be put, they shall transmit such application to the Mayor with the approval thereon, and the Mayor shall thereupon issue or cause to be issued to such applicant, upon the payment by him to the city collector of the license fee as therein provided, a license attested by the city clerk, authorizing such applicant to carry on, engage in and conduct the business of distributor of milk or milk products in the city, in the manner and at the place designated in such application, and to employ in and about such business the number of wagons or other vehicles designated and described in such

application, for and during the period for which such license is issued.

No license issued hereunder shall entitle or authorize the licensee named therein to carry on, engage in or conduct the business of distributor of milk or milk products in any place or places other than that described and set out in such license, and a separate license fee shall be
2256 paid for each and every place at which such business is carried on, engaged in or conducted; provided, however, that if any licensee shall desire to carry on, engage in or conduct the business of distributor of milk or milk products at more than one place of business and employ the same wagons or other vehicles at each place of business, he shall not be required to pay more than one license fee to the City of Chicago for each such wagon or other vehicle.

If any person licensed under the provisions of this article, shall sell, transfer, assign or change the location of his place of business, application for a transfer or assignment of license shall be made to the board of health, and no such business so sold, transferred, or assigned, shall be conducted or carried on at such location until such application shall have been made and approved by the board of health as herein provided.

3087. License Fees.) Every person selling or disposing of milk or milk products shall annually pay a license fee as hereinafter provided.

Every person selling, offering for sale, exposing for sale, exchange or delivery, or disposing of milk or milk products in and from any milk plant or milk receiving station, shall pay an annual license fee graded according to the size of such establishment, as evidenced by the number of wagons or motor vehicles run, as follows:

Running not more than one wagon or motor vehicle	$ 5.00
Running 2 to 3 wagons or motor vehicles	10.00
Running 4 to 5 wagons or motor vehicles	20.00
Running 6 to 10 wagons or motor vehicles	40.00
Running 11 to 15 wagons or motor vehicles	60.00
Running 16 to 25 wagons or motor vehicles	100.00
Running 26 to 35 wagons or motor vehicles	140.00
Running 36 to 50 wagons or motor vehicles	200.00
Running 51 to 75 wagons or motor vehicles	300.00
Running 76 to 100 wagons or motor vehicles	400.00
Running over 100 wagons or motor vehicles	500.00

Such person shall also pay an additional annual license fee for each vehicle used for the delivery or sale of milk or milk products, as follows:

One horse wagon or not to exceed one ton truck or motor vehicle	$10.00
Two horse wagon or truck in excess of capacity of one ton and not in excess of two tons	15.00
Truck in excess of capacity of two tons	25.00

Provided, however, that distributors of milk operating independently of any licensed depot, or in connection with or from any milk plant or receiving station located outside of the city of Chicago, and delivering, selling or offering milk or milk products for sale in the city of Chicago, shall pay an annual license fee of fifteen dollars for each wagon, and twenty-five dollars for each motor vehicle operated in the city of Chicago; and provided, further, that every person selling principally milk or milk products in bulk at wholesale, either as dealers, jobbers, brokers or agents, shall pay an annual license fee of fifty dollars for each establishment from which such business is conducted, and an additional fee for each vehicle operated, as follows:

One horse wagon or not to exceed one ton truck or motor vehicle	$10.00
Two horse wagon or truck in excess of capacity of one ton and not in excess of two tons	15.00
Truck in excess of capacity of two tons	25.00

Every person selling, offering for sale, exposing for sale, exchange or delivery, or disposing of milk or milk products, which is not intended to be consumed on the premises, in and from any milk plant, such as a milk depot, store, stand, booth, market place, or any building or enclosure or establishment of a similar character, shall pay an annual license fee of five dollars.

2257 3088. Vehicles to Display License Emblem on Windshield.) No person shall sell, offer for sale, or convey, or cause to be conveyed on or in any wagon or other vehicle or to be delivered therefrom any milk or milk products, unless such wagon or other vehicle shall have affixed to the inside glass part of the windshield of such vehicle, a license emblem on which shall be stamped a number corresponding to the license number of the milk

distributor, by whom such vehicle is used, and also the words "Chicago" and "Milk," together with the year for which the milk distributor using such vehicle is licensed. Such license emblem shall be obtained from the city clerk at the time the license is issued.

It shall be the duty of the city clerk to change annually the predominant background color of such license emblem. Said emblem shall be impervious to weather and incapable of being removed without being destroyed. A license to distribute milk or milk products, as provided for under the provisions of this article shall be void and of no effect unless such license emblem described in this article shall be posted in the manner provided for.

No license emblem shall be permitted to remain affixed to the windshield of a milk vehicle after the period for which such emblem was issued has expired.

3089. Revocation of License.) All licenses granted pursuant to this article may at any time be revoked by the Mayor for violations of the provisions hereof, or the rules and regulations of the board of health, or for any other good and sufficient cause.

3090. Labeling and Placarding.) All bottles, cans, packages, and other containers enclosing milk or any milk product defined in this ordinance shall be plainly marked or labeled with the following and only such other information as may be designated by the board of health:

1. The name of the contents as given in the definitions in this ordinance.

2. The word "pasteurized" only if the contents have been pasteurized.

3. The word "raw" only if the contents are raw.

4. The name and address of the producer if the contents are raw, and the name and address of the plant at which the contents were pasteurized if the contents are pasteurized.

5. In the case of vitamin D milk, the designation "vitamin D milk," and such other information as may be required by the board of health.

6. The permit number.

7. On all cans, bottles, and other containers of pasteurized or certified milk, the words "to be sold" and thereafter the day of the week on which the milk or milk product is to be sold to the final consumer, the height of the letters of the day of the week to be not less than 3/16 inch on

bottle caps, and not less than 5/8 inch on tags attached to each container when contained in cans.

8. On all cans and other containers of milk and milk products received by pasteurization plants from receiving stations, the day of the week received by the receiving station.

9. The word "milk" shall not appear or be used on any label, cap, receptacle, or container for any products except those defined in this article as milk, skimmed milk, buttermilk, cultured buttermilk, vitamin D milk, and any other products designated by the board of health.

All milk produced shall be delivered daily to a milk receiving station or a pasteurization plant.

All milk received by pasteurization plants must be pasteurized within such time of production or receipt by the receiving station as may be designated by the rules and regulations of the board of health.

Every restaurant, cafe, soda fountain, or other establishment serving milk or milk products in bulk shall display at all times, in a place designated by the board of health, a notice approved by the board of health, giving all information required in this section, and such other information required by the board of health.

Milk only is to be delivered from a dairy farm to a receiving station or pasteurizing plant, and all milk produced for pasteurization shall be delivered daily to a milk receiving station or a pasteurizing plant. All milk received by pasteurization plants must be pasteurized
2258 within 24 hours of production or receipt by the receiving station.

Cans, tanks, or similar receptacles of milk or milk products delivered in or into the city of Chicago shall be sealed with an unbroken wire or metal seal, at the place where such milk or milk products are placed in such cans or receptacles, except where expressly exempted by the board of health.

The original tags or labels shall remain on all cans, tanks, or similar containers until the milk or milk products in such containers are emptied therefrom for processing or sale.

All caps or labels on cans, bottles and other containers of pasteurized milk, cream and skimmed milk shall include the words "before noon" after the words "to be sold."

A proof-print or sketch of the bottle cap or cover, or of the can tags and labels showing the size and arrangement of

the lettering thereon, shall be submitted to and approved by the board of health.

When milk or milk products are enclosed in bottles or glass jars, the name or address blown into such bottle or glass jar, or otherwise indicated thereon, shall not be other than or different from that which is indicated on the cover or cap thereof.

Milk products placed into storage or frozen, for periods exceeding seven days, shall be stored or frozen in the original container and bear the original tags or labels on such containers. A record shall be furnished to the board of health of the place and date of storage, kind and amount of product, and a record shall also be furnished of the time said milk product is removed for use. Dried milk and milk products and butter shall bear the board of health permit number stenciled on the outside and inside surfaces of the barrel, tub or other container, in letters at least one inch in height, and butter shall also bear said mark stamped on the top surface of the butter in each tub or container in the following letters and figures: C. B. H. (permit number).

3091. Inspection of Dairy Farms and Milk Plants—Report to Be Posted.) At least once during each inspection period, the board of health shall inspect all dairy farms and all milk plants whose milk or milk products are intended for consumption within the city of Chicago. In case the board of health discovers the violation of any item of sanitation, it shall make a second inspection after a lapse of such time as it deems necessary for the defect to be remedied, and the second inspection shall be used in determining compliance with this article. Any violation of any item of this ordinance on two consecutive inspections shall be cause for immediate revocation of permit.

One copy of the inspection report shall be posted by the board of health in a conspicuous place upon an inside wall of one of the dairy farm or milk plant buildings, and said inspection report shall not be removed by any person except the board of health. The original copy of the inspection report shall be filed with the records of the board of health.*

* The first sentence of this section should not be taken to imply that one inspection per inspection period is a desirable frequency. It should, instead, be regarded as the legal minimum. In actual practice, it is desirable to inspect every dairy farm at least two or three times during each inspection period and every milk plant at least every two weeks. As often as possible, inspection of farms should be made during milking time, and of plants while pasteurization or processing is in progress.

A dairy or milk plant may immediately have its permit revoked without waiting for the end of the inspection period if two successive inspections disclose one or more violations of the requirements. Even if the two violations do not refer to the same item of sanitation, this shall nevertheless be cause for immediate revocation of permit.

The inspector should post one copy of the inspection report at the dairy or milk plant, and said report shall not be removed, altered or defaced by any person except the board of health.**

Every inspection report shall be receipted for upon the place designated on the face thereof, except that if inspections are made in the absence of the proprietor or his agents, the inspection report should be posted nevertheless, but, in addition, a written notification should be mailed to said proprietor.

3092. Examination of Samples.) During each inspection period, a number of samples of milk or milk products from each dairy farm and each milk plant, as designated by the rules and regulations of the board of health, shall be taken on separate days and examined by the board of health. Samples of milk and/or milk products from stores, cafes, soda fountains, restaurants, and other places where milk or milk products are sold shall be examined as often as the board of health may require. Bacterial plate counts shall be made in conformity with the latest standard methods recommended by the American Public Health Association, or any other method approved by the board of health. Examinations may include such other chemical and physical determinations as the board of health may deem necessary for the detection of adulteration, these ex-
2259 aminations to be made in accordance with the latest standard methods of the American Public Health Association and the Association of Official Agricultural Chemists, or any other method approved by the board of health. Bacterial plate counts, reductase test, and cooling temperature results shall be given to the producer or distributor concerned as soon as determined if said results fall without the limits prescribed. Samples may be taken by the board of health at any time prior to the final delivery of the milk or milk produts. All proprietors of stores, cafes, restaurants, soda fountains, and other similar

** The milk-house wall of the farm and the wall of the plant office are effective locations.

places shall furnish the board of health, upon its request, with the name of the distributor from whom their milk and/or milk products are obtained. Bioassays of the vitamin D content of vitamin D milk shall be made when required by the board of health in a laboratory acceptable to it for such examinations.

Samples of milk and milk products shall be paid for at the market price upon request.

Four or more samples of a given milk supply shall be examined before attempting to determine the average bacterial quality of the milk. It is required that at least four samples be taken from each supply during each inspection period.

Bacterial Plate Counts and Reductase Tests

It is required that grade A pasteurized and certified milk fall within certain limits of average bacterial plate counts or average reduction time as determined by the reductase test.

Public health reason.—It is widely accepted that the bacterial plate count of milk is an index of the sanitary quality of milk. A high count does not necessarily mean that disease organisms are present, and a low count does not necessarily mean that disease organisms are absent; but a high bacterial plate count does mean that the milk has either come from diseased udders, has been milked or handled under undesirable conditions, or has been kept warm enough to permit bacterial growth. This means, in the first two cases, that the chances of infection have been increased and, in the last case, that any infection which has reached the milk has been permitted to grow to more dangerous proportions. In general, therefore, a high count means a greater likelihood of disease transmission.

The collection of milk samples.—Milk samples will be collected so as to represent the condition of the milk when reaching the consumer, milk plant, or receiving station.

Samples, when taken, must, without fail, be kept below 50° F. until plated. This will require that the samples be packed in ice, or placed in a suitable refrigerator, until examined.

In case of bottled milk, a pint or quart bottle shall be taken at random by the inspector and, except in the case of cover or hood caps, the top covered with a suitable cover so as to assure the dairyman that the milk will not be

contaminated en route to the laboratory by the hands of the inspector or by the ice in the sample case.* The sample form must be filled out in triplicate by the inspector at the time the sample is taken, and the corresponding number sticker attached to the bottle. A copy of the form shall be left with the person who is in attendance at the time the sample is taken. The inspector shall also fill out a laboratory report card, to be turned in with his sample to the laboratory, upon which the laboratory results shall be entered. The results of the tests shall then be recorded on the sample form, one copy remaining in the board of health files, and the second copy being returned to the inspector. The person from whom the sample was taken may secure the results of such examination, upon request, by presenting his copy of the sampling form.*

Reporting Bacterial Plate Counts

For all except known high-count milk or very low-count milk the dilutions used shall be 1-100 and 1-1000; for the high-count milk 1-1000 and 1-10000, and for the very low-count 1-10 and 1-100. The following special rules for reporting counts shall be used:

(1) When the higher plate count is more than twice the lower, record the lower count.

(2) When the higher plate count is not more than twice the lower, apply the Standard Method rules for counting.

(3) In case one plate cannot be counted because of a spreader covering more than half the plate, the result is to be reported as unsatisfactory unless the count of the other plate is within the limit required by these regulations.

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* For the collection of bulk samples at pasteurizing plants or at their country cooling stations, the following procedure is recommended. Five ounces of stock chlorine solution are added to a five-gallon can of water. A long-handled dipper is kept in this solution for a few moments and then used to stir the milk and collect the sample. It may be used without further bactericidal treatment for taking samples from any number of cans from the same producer, but must be re-treated before proceeding to sample milk from the next producer. The small amount of chlorine carried into the milk on the dipper will not affect its bacterial count. The cans of milk should be well stirred before the samples are taken, in order that the samples may be representative. Sample bottles should be of not less than four-ounce capacity.

In lieu of the above method, sterile pipettes may be used for collecting samples.

* The number of routine samples which must be examined makes the use of more than two dilutions per sample impracticable. For this reason, it has become general practice to make only two dilutions.

(4) Report bacterial plate counts to the nearest 1,000, unless the count exceeds 100,000, in which case report to the nearest 10,000, or unless the count exceeds 1,000,000, in which case report to the nearest 100,000.

(5) Plates showing no growth shall be reported as unsatisfactory.

2260 Averaging bacterial plate counts in determining compliance*

The averaging of bacterial plate counts under this ordinance shall be done by the logarithmic method.**

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* In determining the bacterial quality of milk supplies, the average of the last four consecutive counts or reductase hours is used because less than this number has been found by experience not to give a dependable picture of the bacteriological condition of a milk supply.

** How to find the average bacterial plate count by logarithms.—The logarithms of all bacterial plate counts from 1,000 to 100,000,000 are given directly in the following table. The logarithms should be entered opposite the counts in the milk control ledger. To find the average bacterial plate count, find the average of the logarithms and then find the bacterial plate count in the table which is opposite the average logarithm. (See table.)

Following is an example:

Counts	Logarithms
35,000	4.54
11,000	4.04
9,000	3.95
95,000	4.98
	4)17.51
	4.38 = average logarithm

4.38 in the table is opposite 24,000 which is, therefore, the average bacterial count.

If it is found that the average logarithm occurs opposite more than one bacterial plate count in the table, take the lowest bacterial count as the average.

TABLE TO BE USED IN COMPUTING LOGARITHMIC AVERAGES OF BACTERIAL PLATE COUNTS

1,000—3.00	60,000—4.78	330,000—5.52	960,000—5.98
2,000—3.30	61,000—4.79	340,000—5.53	970,000—5.99
3,000—3.48	62,000—4.79	350,000—5.54	980,000—5.99
4,000—3.60	63,000—4.80	360,000—5.56	990,000—5.99
5,000—3.70	64,000—4.81	370,000—5.57	1,000,000—6.00
6,000—3.78	65,000—4.81	380,000—5.58	1,100,000—6.04
7,000—3.85	66,000—4.82	390,000—5.59	1,200,000—6.08
8,000—3.90	67,000—4.83	400,000—5.60	1,300,000—6.11
9,000—3.95	68,000—4.83	410,000—5.61	1,400,000—6.15
10,000—4.00	69,000—4.84	420,000—5.62	1,500,000—6.18
11,000—4.04	70,000—4.85	430,000—5.63	1,600,000—6.20
12,000—4.08	71,000—4.85	440,000—5.64	1,700,000—6.23
13,000—4.11	72,000—4.86	450,000—5.65	1,800,000—6.26
14,000—4.15	73,000—4.86	460,000—5.66	1,900,000—6.28
15,000—4.18	74,000—4.87	470,000—5.67	2,000,000—6.30
16,000—4.20	75,000—4.88	480,000—5.68	2,100,000—6.32
17,000—4.23	76,000—4.88	490,000—5.69	2,200,000—6.34
18,000—4.26	77,000—4.89	500,000—5.70	2,300,000—6.36
19,000—4.28	78,000—4.89	510,000—5.71	2,400,000—6.38
20,000—4.30	79,000—4.90	520,000—5.72	2,500,000—6.40
21,000—4.32	80,000—4.90	530,000—5.72	2,600,000—6.42
22,000—4.34	81,000—4.91	540,000—5.73	2,700,000—6.43
23,000—4.36	82,000—4.91	550,000—5.74	2,800,000—6.45
24,000—4.38	83,000—4.92	560,000—5.75	2,900,000—6.46
25,000—4.40	84,000—4.92	570,000—5.76	3,000,000—6.48
26,000—4.42	85,000—4.93	580,000—5.76	3,100,000—6.49
27,000—4.43	86,000—4.93	590,000—5.77	3,200,000—6.51
28,000—4.45	87,000—4.94	600,000—5.78	3,300,000—6.52
29,000—4.46	88,000—4.94	610,000—5.79	3,400,000—6.53
30,000—4.48	89,000—4.95	620,000—5.79	3,500,000—6.54
31,000—4.49	90,000—4.95	630,000—5.80	3,600,000—6.56
32,000—4.51	91,000—4.96	640,000—5.81	3,700,000—6.57
33,000—4.52	92,000—4.96	650,000—5.81	3,800,000—6.58
34,000—4.53	93,000—4.97	660,000—5.82	3,900,000—6.59
35,000—4.54	94,000—4.97	670,000—5.83	4,000,000—6.60
36,000—4.56	95,000—4.98	680,000—5.83	5,000,000—6.70
37,000—4.57	96,000—4.98	690,000—5.84	6,000,000—6.78
38,000—4.58	97,000—4.99	700,000—5.85	7,000,000—6.85
39,000—4.59	98,000—4.99	710,000—5.85	8,000,000—6.90
40,000—4.60	99,000—4.99	720,000—5.86	9,000,000—6.95
41,000—4.61	100,000—5.00	730,000—5.86	10,000,000—7.00
42,000—4.62	110,000—5.04	740,000—5.87	11,000,000—7.04
43,000—4.63	120,000—5.08	750,000—5.88	12,000,000—7.08
44,000—4.64	130,000—5.11	760,000—5.88	13,000,000—7.11
45,000—4.65	140,000—5.15	770,000—5.89	14,000,000—7.15
46,000—4.66	150,000—5.18	780,000—5.89	15,000,000—7.18
47,000—4.67	160,000—5.20	790,000—5.90	16,000,000—7.20
48,000—4.68	170,000—5.23	800,000—5.90	17,000,000—7.23
49,000—4.69	180,000—5.26	810,000—5.91	18,000,000—7.26
50,000—4.70	190,000—5.28	820,000—5.91	19,000,000—7.28
51,000—4.71	200,000—5.30	830,000—5.92	20,000,000—7.30
52,000—4.72	210,000—5.32	840,000—5.92	30,000,000—7.48
53,000—4.72	220,000—5.34	850,000—5.93	40,000,000—7.60
54,000—4.73	230,000—5.36	860,000—5.93	50,000,000—7.70
55,000—4.74	240,000—5.38	870,000—5.94	60,000,000—7.78
56,000—4.75	250,000—5.40	880,000—5.94	70,000,000—7.85
57,000—4.76	260,000—5.42	890,000—5.95	80,000,000—7.90
58,000—4.76	270,000—5.43	940,000—5.97	90,000,000—7.95
59,000—4.77	280,000—5.45	950,000—5.98	100,000,000—8.00

Reductase test.—When the reductase test is used, the procedure shall be as follows: Follow Standard Methods of Milk Analysis except that samples are to be examined at the end of each hour, but not beyond eight hours. The reduction time shall be expressed as the number of elapsed full hours when decolorization is first observed. Samples not reduced at the end of eight hours are to be reported as reduced in nine hours. For purposes of determining bacterial quality, the simple arithmetic average of the last four consecutive samples is to be used.

3093. Kinds of Milk—Requirements.) From and after the date of passage of this ordinance, no milk or milk products shall be sold in the city of Chicago except grade A pasteurized milk and milk products and certified milk and milk products. Requirements for these kinds of milk and milk products shall be as follows:

Grade A Pasteurized Milk and Milk Products

Grade A pasteurized milk and milk products are milk and milk products which conform with the rules and regulations of the board of health for grade A pasteurized milk and milk products.

Requirements for Raw Milk To Be Pasteurized.—Grade A pasteurized milk, before pasteurization, is milk the average bacterial plate count of which, as determined under section 3082 (R) and 3083 of this article, does not exceed 200,000 per cubic centimeter, or the average reduction time of which is not less than six hours, and which is produced upon dairy farms conforming with all of the following items of sanitation.

Item 1r.—Cows.

For diseases other than tuberculosis, such tests and examinations as the board of health may require shall be made at intervals and by methods prescribed by it, and any diseased animals or reactors shall be disposed of as it may require.

All cattle on farms producing milk shall be healthy and free from contagious and infectious diseases, and from any physical condition which might render them unfit for the production of milk for human consumption. Each animal in the herd, six months of age and older, shall be certified by veterinarians under the direction of the state and fed-

eral live-stock authorities, or such veterinarians as may be designated or approved by the board of health of the City of Chicago. Herds certified in such manner shall be eligible for the production of milk when they have been examined and certified within one year prior to the time
2261 when milk has been accepted therefrom. When herds are located in federal modified accredited areas the time may be extended to three years at the discretion of the board of health.

The examination of all animals shall be of such a character as to enable the veterinarian to determine whether they are free from communicable diseases of all kinds or any condition which might render them unfit for the production of milk for human consumption, to which he shall be able to certify. Such test or tests may be repeated whenever deemed necessary or advisable by the board of health.

No animal, six months of age or older, shall be added to a herd unless such animal has been examined by a veterinarian, and a certificate issued therefor as herein specified.

All cattle upon examination, found to be diseased or in a condition which might render them unfit for the production of milk for human consumption by the authorized veterinarian or representatives of the board of health, shall be immediately excluded from the herd, and any milk from such animals shall be withheld from human consumption.

There shall be filed with the board of health a current certificate covering all tests made by veterinarians with the records of each animal properly identified. Such certificate shall be on file with the board of health before milk shall be offered for shipment, and during the entire period of production.

Item 2r.—Dairy Barn—Lighting.

A dairy or milking barn shall be required, and such sections thereof where cows are milked shall have at least three square feet of light area for each cow in the barn at any one time, and when necessary shall be provided with adequate supplementary artificial light.

Public health reason.—Adequate light makes it more likely that the barn will be clean, and that the cows will be milked in a cleanly manner.

Satisfactory compliance.—Glazed windows, doors, and other unobstructed openings in the milking barn amount

ing in total area to three square feet per cow and reasonably evenly distributed, shall be considered satisfactory compliance with this item. In computing light space half credit shall be given for openings obstructed by an overhanging roof. The covering of windows or door openings by boards or other non-transparent material shall be deemed as reducing the light space in proportion to the area covered. No credit shall be given for openings into enclosed covered spaces, or for doors which the inspector finds closed at any time.*

Adequate artificial lighting must be provided for night milking. The inspector shall consider the requirement of adequate artificial light to be satisfied if the milking portion of the barn is so lighted that cleaning and milking operations can be efficiently performed.

Item 3r.—Dairy Barn—Air Space, Ventilation, Etc.

Such sections of all dairy barns where cows are kept or milked shall have at least 400 cubic feet of air space per cow in the barn at any one time, and shall be well ventilated.

Public health reason.—This item is required in order to avoid overcrowding and to insure proper ventilation.*

Satisfactory compliance.—The ventilation part of this item shall be deemed to have been satisfied when, in the judgment of the board of health, conditions are such as to result in sufficient fresh air at all times.

Stanchions shall be required for the maximum number of cows in the milking barn at any one time, and shall be of such width as to prevent overcrowding, and not less than thirty-six inches wide (does not apply to goat barns) or such greater width as may be required for the size of cow in the stanchion; and shall be of such length that the droppings will tend to fall into the manure gutter.

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* In computing window area, find the area in square feet of each light opening, divide by two such of these areas as are obstructed by boards or overhanging roof; total all areas thus found, and divide the total by the maximum number of cows in the barn at any one time. The result is the effective window area.

* Compute the floor area by multiplying the length by the width of the section of the barn where the cows are kept or milked. Multiply this result by the average height of the roof or ceiling in this section. (If the roof is gabled or ridged, this height should be taken as the average of the side wall and ridge pole heights.) To find the air space per cow, divide the total air space thus found by the number of cows.

If this quotient is less than 400, the barn does not meet the specifications for grade A pasteurized milk. In order to determine the maximum number of cows which a barn of given size will permit, divide the total air space by 400.

Stanchions should be preferably at least 42 inches apart and equipped with metal or other suitable dividers or partitions, and shall be required on all farms which may hereafter be approved to produce milk for sale in Chicago.

Windows opened for ventilation purposes should preferably be tilted back from the bottom, permitting the top to be open, the sides being boxed, in order to prevent a direct draft on the cows.

Item 4r.—Dairy Barn—Floors.

The floors and gutters of such parts of all dairy barns in which cows are milked shall be constructed of concrete or other impervious and easily cleaned material approved by the board of health, shall be graded to drain properly, and shall be kept clean and in good repair. No horses, pigs, fowl, calves, etc. shall be permitted in parts of the barn used for milking.

4r(a)—Floor Construction.

Public health reason.—Floors constructed of concrete or other impervious materials can be kept clean more easily than floors constructed of earth, or similar materials, and are therefore more apt to be kept clean.

2262 The floors should preferably be of concrete, but may be of other similar impervious material approved by the board of health. Cork bricks or creosoted wood blocks, and well-constructed wood floors, so long as these are impervious to water and permit no pooling of liquids or wash-water, are approved.

Earth floors are not approved because they are not deemed impervious.

Other portions of the barn shall be separated from the milking portion by railings or partitions. If such other portions of the barn are not kept clean, and free from dust and objectionable odors, tight partitions are required; in fact, tight partitions are recommended for all cases.*

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* It is recommended, but not required, that feed troughs be of smooth-surfaced concrete in order to facilitate bactericidal treatment when necessary.

Although it has become general practice among modern dairymen to build milking-barn floors of concrete, some dairymen still hesitate to take this step because of the fear of possible injury to their cattle. This objection is answered by the experience of the great number of dairymen who milk on concrete floors. The danger of injuries is not great enough to counterbalance the many advantages of a well-drained, impervious barn floor. The floor should have an untrowelled surface in order to prevent slipping. When necessary to keep the cattle in the milking barn, the floors may be bedded in order to prevent discomfort.

Concrete floors in barns under construction or reconstruction should have curbs where the floor joins the walls. These are desirable in order to promote cleanliness in the angles of the floor and walls, and to avoid rotting of wall sills and studs. Gutters shall be required of ample capacity to care for the accumulation of manure between milking periods. The size of the gutter shall be such as to promote cleanliness and improve drainage. A gutter 8 inches deep and 16 inches wide is preferred, and shall be required of all farms which may hereafter be approved to produce milk for sale in Chicago.

Driveways behind cows may be acceptable in place of the gutter where the depth of the drop is ample and the floor is properly graded.

4r(b)—Floor Cleanliness.

Public health reason.—A clean floor reduces the chances of contamination of the milk or milk pails during milking. The presence of other animals increases uncleanliness.

Satisfactory compliance. This item shall be deemed to have been satisfied if the milking-barn floor is free of accumulations of filth or litter except such as have accumulated since the beginning of the last milking period; provided that the floor must be clean at the beginning of each milking period; and if horses, pigs, fowl, etc., are kept out of the milking barn.

When floors of milking barns are bedded, bedding containing more than one milking's collection of manure shall be considered as equivalent to unclean floors.

Dairymen whose barns are provided with water under pressure should scrub the floors after each milking with a stiff-bristled brush. In barns in which water under pressure is not available, the floors may be brushed dry and limed. In the latter event, care should be exercised to prevent caking of the lime. If clean floors are not maintained by this method the inspector should require cleansing with water.

Item 5r.—Dairy Barn—Walls and Ceilings.

The walls and ceilings of all dairy barns shall be whitewashed once each year or painted once every two years, or oftener if necessary, or finished in a manner approved by the board of health, and shall be kept clean and in good repair. In case there is a second story above that part of

the barn in which cows are milked, the ceiling shall be tight. If the feed room adjoins the milking space, it shall be separated therefrom by a dust-tight partition provided with self-closing doors.

Public health reason.—Whitewashed, painted, or properly finished walls and ceilings encourage cleanliness, and whitewash is a disinfectant as well. Tight ceilings and feed rooms reduce the likelihood of dust and trash getting into the milk and thus increasing its bacterial count.

Satisfactory compliance.—This item shall be deemed to have been satisfied if the walls and ceilings

(1) Have been whitewashed or finished with cold-water paint once every year or oftener if necessary; or

(2) Have been painted once every two years, or oftener if necessary; or

(3) Have interior surfaces of finished concrete, concrete block, brick, tile, galvanized iron, plaster, or similar material which may be accepted without painting; joints and rafters of the roof structure shall not be required to be whitewashed or painted, but must be kept clean; the use of wall board attached to the rafters to make the ceiling tight shall be accepted; and

(4) Are in good condition, with ceiling tight if there is second story above the milking portion of the barn, and with a dust-tight partition, provided with self-closing doors, separating the milking space from the feed room.

Barns newly constructed of wood shall be required to be painted or whitewashed when completed.*

Item 6r.—Dairy Barn—Cow Yard.

All cow yards shall be graded and drained as well as practicable and kept clean.

2263 6r(a)—Grading and Draining of the Cow Yard.

Public health reason.—The cow yard is interpreted

* Whitewash formula.—The following formula for whitewash has given satisfaction:

Unslacked lime	2 pecks
Spanish whiting (barium sulphate)	½ pound
Salt	1 peck
Powdered glue	1 pound
Rice flour	3 pounds

Add water so that it can be applied easily and thoroughly. For full painting and witewashing instructions, see U. S. Department of Agriculture Farmers' Buiietin No. 1452.

to be that enclosed or unenclosed area in which the cows are apt to congregate, approximately adjacent to the barn. This area is, therefore, particularly apt to become filthy with manure droppings and, being nearest the barn, may be a public health menace through the breeding of flies. The grading and drainage of the cow yard as far as practicable are required because wet conditions are conducive to fly breeding, make it difficult to keep manure removed, and make it difficult to keep the cows clean.

Satisfactory compliance.—This item shall be deemed to have been satisfied:

(1) When the cow yard has been graded and drained as well as local conditions will permit. Low places must in all cases be filled in with hard material. Approaches to barn door and to stock tank should preferably be of concrete.*

(2) When the wastes from the barn and milk room are not allowed to pool in the cow yard.

6r(b)—Cleanliness of the Cow Yard.

Public health reason.—If manure and barn sweepings are allowed to accumulate in the cow yard fly breeding will be promoted and the cows will, because of their habit of lying down, be more apt to have manure-soiled udders.

Satisfactory compliance.—This item shall be deemed to have been satisfied if the cow yard is kept clean. Swine should not be permitted in the cow yard. The stock-watering tank shall be kept clean at all times.

Item 7r.—Manure Disposal.

All manure shall be removed and stored or disposed of in such manner as best to prevent the breeding of flies therein or the access of cows to piles thereof.

Public health reason.—Improper manure disposal induces the breeding of flies, which are considered capable of transmitting infection to milk or milk utensils.

Satisfactory compliance.—This item shall be deemed to have been satisfied when the manure droppings are re-

* The most satisfactory method of conducting milking-barn wastes and wash water beyond the cow yard limit is the construction of a drain. The drain should preferably be lined with concrete, tile, or brick, although a well-kept open earth ditch will be accepted. Open drains are recommended because of the danger of frequent clogging of closed drains, unless closed drains of adequate diameter and slope can be provided.

moved from the barn floor between each milking and the cow yard is kept clean, and manure is

(1) Spread upon the fields, or

(2) Stored for not more than four days in a pile on the ground surface, and then spread upon the field, or

(3) Stored for not more than seven days in an impervious floored bin or upon an impervious curbed platform, and then spread or stored in a tight, screened, and trapped manure shed, or

(4) Fly breeding is minimized by methods equivalent to the recommendations of the U. S. Department of Agriculture, Bureau of Dairying, Milk Inspector Letter No. 104, May, 1926:*

Requirements (1) to (4) shall apply only during the fly-breeding season. Manure, if stored in a pile, shall be stored in such a way as to be inaccessible to the cows, and not in close proximinity to the barn, and in such manner that a nuisance will not exist. Storage of manure at least 30 feet from the barn is preferred.

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* "Any program to eradicate flies from dairies should begin with the elimination of breeding places. The premises should be cleared of piles of manure and other refuse, such as spoiled silage and accumulations of wet and decaying hay and straw. Even with the utmost care flies cannot be entirely prevented from breeding, and it is necessary to destroy those which do appear from undetected breeding places and the premises of neighbors. In carrying on this work, traps properly constructed and baited, and the judicious use of sprays will be found helpful and not exorbitantly expensive.

"The baited traps are used for catching the flies which do not bite but get their nourishment from foods they can suck through their elongated mouth parts. Most of these are the common house flies. The spray is used to kill or repel the biting type of flies that live on blood, which they obtain by piercing the skins of animals. Stable and horn flies are examples of this type.

"Last year the Bureau of Dairying, on its experimental farm at Beltsville, Md., with the cooperation of the Bureau of Entomology, made effective use of the fly-fighting measures outlined above. The premises were kept as free as possible from accumulations of manure. Box stalls were cleaned and scraped regularly. As a rule, manure was not allowed to accumulate near the buildings for more than three or four days, and an effort was made to have the immediate premises entirely freed from accumulations of manure at least one each week. Cylindrical traps like those described in Farmers' Bulletin 734 were set as soon as the first flies appeared. They were baited with black strap molasses from sugar cane diluted with three or four parts of water. The bait was removed once a week and the traps emptied when the accumulation of dead flies was so great as to reduce seriously the light under the trap. Before emptying the traps the living flies were killed by steaming the traps for about a minute in a steam sterilizer. During the season the ten traps used caught 86 gallons, or approximately a half billion flies. The milk room was practically free from flies throughout the whole season.

"In order to protect the cattle as much as possible from the horn and

Item 8r.—Milk House or Room—Construction.

There shall be provided a milk house or milk room for the handling and storage of milk and/or milk products and the washing, bactericidal treatment, and storage of milk apparatus and utensils. The milk house or room (a) shall be provided with a tight floor constructed of concrete or other impervious material, in good repair,
2264 and graded to provide proper drainage; (b) shall have walls and ceilings of such construction as to permit easy cleaning, and shall be well painted or finished in a manner approved by the board of health; (c) shall be well lighted and ventilated; (d) shall have all openings effectively screened including outward-opening, self-closing doors to prevent the entrance of flies; and (e) shall be used for no other purposes than those specified above, shall not open directly into a stable, or gasoline engine room, or into any room used for domestic purposes, shall have water piped into it, shall have proper provision for adequate hot water which shall be so located and con-

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stable flies a spray was used. It was thought best to apply a spray which would kill the flies rather than merely repel them.

"A good killing spray may be made by suspending 5-10 pounds of unground, half-closed pyrethrum flowers (inclosed in a double-thickness cheesecloth bag) in a mixture of 9 gallons of kerosene and 4 quarts of fuel oil of 28-32 gravity. The mixtures should stand 24 hours before being used. It may not kill all the flies immediately, but many flies that are hit will fly away and eventually die. Fuel oil is the ordinary low-grade oil that is burned in furnaces for heating, and usually can be bought from fuel dealers. The '28-32' gravity does not mean "specific gravity," but is a commercial term used in the oil business. If 28-32 oil is not available, use any furnace oil. Lubricating oils, including waste oils from engines should not be used. When only small quantities of spray are required, concentrated pyrethrum extracts may be bought. These need only the addition of kerosene and the fuel oil to make them effective.

"To apply this extract an air-pressure sprayer was used which held about one gallon and could easily be operated with one hand. In spraying for horn flies an attempt was made to catch them in a cloud of vapor as they swarmed up after the first spray struck them, and this was very effective. They were easily killed by the pyrethrum extract. In applying this spray, a nozzle which will produce a very fine vapor should be used. This is facilitated by using plenty of pressure.

"In spraying for stable flies, which are in most cases found sucking blood from the cows' legs, the spray was shot directly on them, usually with telling effect. Since the major part of the spray is kerosene, care was taken not to cover the cattle with it unnecessarily, and they were not curried or brushed, or turned out in the hot sun immediately after being sprayed. By observing these precautions no trouble was experienced from blistering.

"Although in both seasons the horn flies had appeared in considerable numbers before the spray was used, their numbers were appreciably reduced after a week of daily spraying, and they were easily kept under control the rest of the season."

ducted as to prevent any contamination of the milk or of cleaned equipment.*

8r(a)—Floors (Concrete or Other Impervious Material, Graded to Drain).

Public health reason.—A well-drained concrete or other impervious floor promotes cleanliness.

Satisfactory compliance.—This item shall be deemed to have been satisfied when the floor consists of concrete, brick, tile, or other composition material approved by the board of health and laid so as to be impervious and to drain properly.

Drain pipes should be carefully set before the floor is laid. A grade of one-fourth to one-half inch per foot gives ample floor drainage. The finish of the floor should be as smooth as possible, and the junction of the floors and walls should be curbed and the joint rounded to avoid angles for collecting and holding dirt. If the milk house is of frame construction, all walls (including partitions) should be made of the floor material up to a height of 10 to 12 inches.

Milk-house floors of brick or concrete, in which depressions have been worn so that liquids stand in them, are unsatisfactory. Smooth floors, the drainage of which is not good, are unsatisfactory.**

8r(b)—Walls and Ceiling (Painting or Other Approved Finish, Easily Cleaned).

Public health reason.—Construction which permits easy cleaning promotes cleanliness.

Satisfactory compliance.—This item shall be deemed to have been satisfied when all parts of the walls and ceiling, except light openings, are composed of

(1) A lining of smooth-dressed, matched lumber, well painted with light colored washable paint, or

(2) Tile, cement blocks, bricks, concrete or cement plaster, provided that the surfaces and joints are smooth, or

(3) Finished in some other manner approved by the board of health.

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* The place in which utensils are washed shall be considered part of the milk room and all requirements of this section shall apply thereto.

** Such conditions can usually be remedied by a new covering of rich cement or fine aggregate concrete, preferably at least two inches thick to avoid frequent repairs.

8r(c)—Lighting and Ventilation.

Public health reason.—Ample light promotes cleanliness, and proper ventilation reduces likelihood of odors.

Satisfactory compliance.—This item shall be deemed to have been satisfied if the window space is glazed and is not less than 10 per cent. of the floor area and the light is reasonably evenly distributed, and if the milk house is adequately ventilated in the judgment of the inspector. A hooded chute ventilator shall be provided, the cross-section area of which is not less than fifty square inches. A ventilator having a cross-section area of 100 square inches is preferred and shall be required on all farms which may hereafter be approved to produce milk for sale in Chicago. Doors and windows shall be kept closed during dusty weather.

Artificial lighting is also important. The milk house must be well lighted for periods when there is not sufficient natural light. The inspector shall consider the milk house to be adequately provided with artificial light if it is equipped with at least one 25-watt electric light or its equivalent for each 100 square feet of floor area, reasonably evenly distributed. An ordinary one-inch-wide flat-wick oil lamp in good condition shall be considered the approximate equivalent of one 25-watt electric light. A gasoline or gas mantle lamp in good condition shall be considered the equivalent of four 25-watt electric lights.

8r(d)—Screening.

Public health reason.—Effective screening tends to prevent the presence of flies, which are a public health menace. Flies may infect the milk with disease germs, which may multiply and become sufficiently numerous to spread disease to the consumers.

Satisfactory compliance.—This item shall be deemed to have been satisfied if all openings are effectively screened whenever flies are evident, and outer doors open outward and are self-closing.

Broken, torn, or poorly fitted screens shall not be accepted as satisfactory compliance.*

All open drains through the wall of the milk house shall be properly screened, trapped, or plugged.

* Fly exclusion can be made more effective when screen doors open outward and are provided with closing devices such as spring hinge, pulley and weight, coil spring, or similar measures. Poorly fitted doors can be provided with flaps of canvas, linoleum, or other material.

Screen cloth, tacked on the outside of the window frames so as to cover openings completely, shall be approved.‡

2265 Screen cloth coarser than 16-mesh to the inch shall not be used.*

Screened milk-house extensions used for storage of utensils shall be approved as part of the milk house if provided with a tight roof and not exposed to dust. If such extensions are exposed to dust they shall be made dustproof.

8r(e)—Miscellaneous Requirements.**

The milk house or room, must, in order to comply with this section, be a separate room used for no other purpose than milk handling and equipment cleaning and bactericidal treatment of equipment, and these operations may not be conducted elsewhere except as subsequently noted.***

When the milk house is a part of or is attached to the barn or dwelling, this part of item 8r shall be deemed to have been satisfied if there is an outside entrance but no entrance through the partition wall, or, if entered from the barn, the entrance is through self-closing doors having a ventilated vestibule between them and so arranged that both doors will not be open at the same time.

The factors and conditions which shall determine the location of the milk house are:

(1) Availability of water.

(2) Transportation of every bucketful of milk from the barn.

(3) Drainage.

(4) Contaminating surroundings.

Each milk house shall have proper provisions for ade-

‡ If the screens are exposed to stress of any kind, light bars of wood across them will prevent breaks or tears.

* The screen cloth of doors should be protected by strips of wood or by a piece of hardware cloth placed across the bottom panel, and at the level where the hands or elbows are generally placed in opening the door.

** When milk is handled in a room used for sleeping or domestic purposes or which opens directly into a room so used, the milk is apt to be exposed to infection from persons other than regularly employed milk handler.

*** If the milk room opens directly into the barn, so that a door is the only barrier between it and the barn, flies are certain to enter the milk room.

quate hot water. The piping of water into the milk house shall be required.

The waste water from the washing of utensils and the scrubbing of the milk house must be led away, and the surroundings of the milk room should be clean and dry.****

Item 9r.—Milk House or Room, Cleanliness and Flies.

The floors, walls, ceilings, and equipment of the milk house or room shall be kept clean at all times. All means necessary for the elimination of flies shall be used.

Public health reason.—Cleanliness and freedom from flies in the milk room reduce the likelihood of contamination of the milk.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) The floors, walls, windows, shelves, tables, and equipment are clean, and

(2) The milk room is free from trash and articles not used in the milk-room work, such as empty cartons, pasteboard boxes, old papers, feed sacks, broken crates, etc., and

(3) Very few or no flies are present.

The milk-house floors should be flushed and swept immediately after the operations incidental to each milking are completed. Tables should be scrubbed daily. Unless the boards of table tops are tight-fitting they should be separated by spaces at least ¾-inch wide. The walls and ceiling should be flushed down as often as necessary.

Rubbish shall be kept removed from the milk house.

Coagulated grease shall not be permitted to accumulate in corners and crevices of the washing vat or between the vat and the wall.

Flies which enter the milk house in spite of good screen-

**** For these reasons the milk house should preferably be located where the natural drainage is good. Wastes from the milk room shall be disposed of as indicated for barn wastes under item 6r (a).

The dairyman may be guided by the following suggested approximate milk house dimensions.

Suggested Floor Space of Milk House

Milk output in gallons:	Existing milk houses:	Future milk houses:
Under 20:	10′ x 8′	12′ x 10′
20-50:	10′ x 10′	12′ x 12′
50-100	10′ x 12′	12′ x 14′
Over 100:	10′ x 14′	12′ x 16′

See Farmers' Bulletin No. 1214.

ing should be killed daily by means of fly paper, fly traps, or fly-killing sprays or powders, or other means.

This section forbids the location of gas engines in the milk room.

Item 10r.—Toilet.

Every dairy farm shall be provided with one or more sanitary toilets conveniently located, and constructed, operated, and maintained in accordance with the recommendations of the board of health so that the waste is inaccessible to flies, and does not pollute the surface soil or contaminate any water supply.

Public health reason.—The organisms of typhoid fever, dysentery, and colitis are present in the body wastes of persons sick with these diseases. In the case of typhoid fever well persons (carriers) may discharge the organisms in their body wastes. If a toilet is not fly tight and so constructed as to prevent overflow, infection may be carried from the excreta to the milk by flies, or through the pollution of water supplies or streams in which the cows wade.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

2266 (1) There is one or more flush toilets connected to a sewer system or to a residential sewage disposal plant and constructed and operated in accordance with plans and instructions of the board of health, or

(2) A chemical toilet or pit privy is provided, constructed and operated in accordance with plans and instructions of the board of health.

(3) There is no evidence of human defecation or urination about the dairy premises except in the toilets provided for these purposes.

(4) Any other requirements of the board of health are satisfied.

Provided further, that (1) and (2) shall include at least the following minimum standards:

A. Flush toilets.—At dairy farms provided with water under pressure, flush toilets are preferable and their installation shall conform to the board of health plumbing regulations which shall include (a) water pressure at all times sufficient to fill the toilet reservoir; (b) toilet bowl of non-absorbent material, rim-flush, properly vented and

trapped, and with tight joints; (c) toilet placed in a well lighted and ventilated room which does not open directly in to the milk room; (d) fixtures protected against freezing; (e) any other requirement of the board of health.

Satisfactory disposal of the effluent from such toilets should preferably be into a sanitary sewer system, otherwise treatment in a septic tank should be required and the effluent discharged into the soil. If proper soil is not available, the effluent shall be disposed of in accordance with the rules of the board of health.

The following shall be considered defects in flush toilet installations: (a) insufficient water pressure or volume; (b) leaky plumbing; (c) clogged sewers as evidenced by overflowing toilet bowl; (d) broken tile lines or clogged disposal field; (e) dairy cows having access to the effluent below the sewer or disposal field discharge; (f) the effluent coming to the surface of the ground in the absorption field; (g) toilet-room floor soaked with urine or other discharges; (h) offensive odors or other evidence of lack of cleanliness; (i) violation of any other requirement of the board of health.

B. Chemical toilets.—In areas where pit toilets might menace water supplies, or where a sufficient volume of water for the operation of flush toilets is not available, the chemical toilet may be accepted provided it (a) has a receiving tank of acid-resisting material with an opening easily accessible for cleaning; (b) has a bowl of nonabsorbent material sufficiently elevated above the receiving basin to avoid splashing the user; (c) has the tank and bowl vented with at least a three-inch screened pipe, preferably of cast iron, which extends at least two feet above the roof line; (d) has the tank charged at proper intervals with chemicals of a bactericidal nature and concentration; (e) is placed in a well-lighted and ventilated room which does not open directly into the milk room or dairy barn; (f) has an effective method of final disposal including burning, burial, or leaching vat or cesspool where such cesspool will not endanger any water supply.

The following shall be considered defects in a chemical toilet installation: (a) violation of any of the above requirements; (b) disagreeable odors indicating too infrequent charging with chemicals, or inadequate concentration of chemicals in the charge; (c) evidence of improper disposal of the tank contents; and (d) lack of cleanliness in the toilet compartment and room.

C. Pit toilets.—For satisfactory compliance the following specifications shall apply:

(a) Location.—Pit toilets shall not be installed in cavernous or loosely stratified formations, nor in close proximity to shallow wells. The location of the pit shall be consistent with the requirements of item 11r. The pit should preferably be at least 50 feet distant from any well, spring, or other source of domestic water supply and, if possible, upon ground sloping from the water supply. A distance of less than 50 feet will be permitted only upon specific approval of the board of health.

(b) The pit.—The pit shall have an original minimum capacity of not less than 60 cubic feet and shall be so excavated that the cribbing, when inserted, shall make a firm, uniform contact with the earth walls on all sides.

(c) Pit cribbing.—The pit cribbing shall extend not less than three inches above the original ground line, and to the full depth of the pit except in rock formation or in very tight soil, in which cases the lower section of the cribbing may be omitted.

(d) Pit curbing.—In case of concrete or metal-slab privies, an additional collar of reinforced concrete shall be constructed around and just outside the top of the pit cribbing on which to set the slab. This collar shall be at least three inches wide and extend down at least four inches into firm earth and up to the top of the pit cribbing. In the case of wood-slab privies, if such a concrete collar is not constructed, there shall be constructed in lieu thereof a mudsill of at least 2-inch by 4-inch material around and just outside the top of the pit cribbing. This sill
2267 shall be at least as long and as wide as the privy floor or pit cover and shall be set on well-tamped earth.

(e) Pit Mound.—An earth mound shall be banked by tamping the excavated earth in layers around the pit curbing and level with the top of the curbing for a distance of not less than 18 inches, then outward to meet the surrounding ground surface with a slope not greater than 1 in 3.

(f) Seat riser.—The bench or seat riser shall have an inside clearance of not less than 18 inches to the front and rear walls and not less than 12 inches to the side walls. The top of the seat shall be not less than 12 nor more than 16 inches from the floor. The seat riser shall be so con-

structed and bonded with the floor as to prevent seepage through the riser onto the floor.

(g) Seat cover.—The seat opening shall be covered with a lid, hinged so as to provide a clearance of not less than three inches horizontally between the back of the seat opening and the lid when raised. The lid shall be so constructed and installed that when closed it will exclude flies.

(h) Vent pipe.—The pit shall be vented from the riser to a point outside the building by a flue or vent pipe having a cross-sectional area of not less than seven square inches. The joints shall be tight and the opening screened with 16-mesh copper screen wire.

(i) Floor and riser.—The floor and riser shall be built of impervious material or tongue-and-grooved lumber, in a manner to exclude flies. The floor and bench, or riser, for a single unit shall cover an area of at least 16 square feet.

(j) Superstructure.—The house shall be rigidly constructed and shall provide privacy and protection from the elements. Except where climatic conditions prohibit, the building shall be ventilated by leaving a 4-inch opening at the top of the walls just beneath the roof. The building should preferably be covered with a roof having a pitch of at least 1 in 4 and with an overhang of not less than 5 inches front, 13 inches back, and 9 inches on each side, with a facing board not less than 4 inches wide extending around the entire margin of the roof.

(k) Drain board.—In order to deflect rainfall from the house foundation, a drain board at least 30 inches wide shall be placed at an angle of approximately 45 degrees at the base of the building and in such manner as to extend beyond the edge of the roof; or, in lieu thereof, the roof may be provided with a gutter with the discharge end extending not less than 18 inches beyond the edge of the roof.

(l) Maintenance and operation.—The following shall be considered defects in pit-toilet installations; (a) evidence of caving around the edges of the pit; (b) signs of overflow or other evidence that the pit is full; (c) seat covers open; (d) broken, perforated, or unscreened vent pipe; (e) uncleanliness of any kind in the toilet building; (f) toilet room opening directly into milk room or dairy barn; and (g) evidence of light entering pit except through seat when seat cover is raised; (h) violation of any other requirement of the board of health.

Item 11r.—Water Supply.

The water supply for the milk room and dairy barn shall be properly located, constructed, and operated and shall be easily accessible, adequate, and of a safe sanitary quality.

Public health reason.—A dairy farm water supply should be accessible so as to encourage its use in cleansing and cooling operations; it should be adequate so that cleansing and rinsing will be thorough; and it should be of safe, sanitary quality in order to avoid the infection of milk utensils.

A slightly polluted water supply used in the rinsing of dairy utensils and containers may be far more dangerous than a similar water supply used for drinking purposes only. Bacteria grow much faster in milk than in water, and the severity of an attack of a given disease depends largely upon the size of the dose of disease germs taken into the system. Therefore, a small number of disease organisms consumed in a glass of water from a slightly polluted well may possibly result in no harm, but if left in a milk vessel which has been rinsed with the water may, after several hours growth in the milk, result in a case of disease.

Satisfactory compliance.—This item shall be deemed to have been satisfied:

(1) When the water supply is easily accessible to the milk house and the dairy barn.

(2) When the water supply is, in the judgment of the inspector, adequate in quantity to promote cleanliness, and proper cooling.

(3) When no surface or cistern water supply is used except under conditions approved by the board of health.

(4) When the source of water supply is a public water supply approved by the board of health, or a spring, dug well, driven well, bored well, or drilled well which complies with the following specifications; provided that items (c), (f), and (j) shall be required only for water-supply structures which are installed subsequent to the first inspection based upon these requirements:

At least one inspection shall be made each inspection period to determine whether the location, construction, and operation of the supply comply with the specifica-

tions which follow. Bacteriological results on samples
2268 of water shall comply with the U. S. Treasury Standards for drinking water.

(a) Privies, etc., near wells.—Every well or spring shall be located in such manner that neither underground nor surface contamination from any cesspool, privy, or other possible source of pollution can reach such water supply. The horizontal distance from any such possible source of pollution shall be not less than 50 feet, except as provided under (b). If bacteriological examinations or other evidence indicate pollution, the distance shall be increased or the location of the water supply changed to meet these specifications.

(b) Sewers near wells.—No floor drain, soil pipe, main drain, or other pipe which is directly connected to a storm or sanitary sewer, or through which water or sewage from any source may back up, shall be located nearer than 10 feet to any well. All pipes and drains or parts thereof through which sewage or waste water flows, or into which sewage or waste water may back up; which are located within 50 feet of any such water supply or more than 10 feet from a well, shall be constructed of cast iron pipe with leaded joints.

(c) Sewers near water lines.—No water pipe shall be closer than 10 feet, measured horizontally, to any sewer or drain which may at any time contain polluted water, provided that water pipes and sewers or drains may cross each other at distances less than 10 feet if the water pipe is above the sewer or drain, and if such parts of the sewer or drain lying within 10 feet horizontally of the water pipe are constructed of cast iron pipe with leaded joints.

(d) Leakage from toilets and sewers.—No toilet, sewer, soil pipe or drain shall be located over or where leakage therefrom can reach any water storage basin, reservoir, source of water supply, or pump room.

(e) Pits near water supply.—There shall be no pit or unfilled space below ground surface level, any part of which is within 10 feet of such water supply.

(f) Well casing or lining. —All that part of the suction pipe or drop pipe of any well within 10 feet of and below the ground surface shall be surrounded by a watertight casing pipe extending above the ground, platform, or floor surface, as the case may be, and covered at the

top as herein provided. If a well has a lower casing disconnected from the upper casing, required as aforesaid, such lower casing shall be cut off at least 10 feet below the ground surface, and the top of the casing shall be closed with a suitable water-tight cover and shall be covered with a compact earth fill so that there will be no depression at the ground surface above the casing top; provided that a dug well, in lieu of such casing pipe, may be provided with a substantial, water-tight lining of concrete, vitrified tile with outer concrete lining, or other suitable material. Such lining shall extend down for a distance of at least 10 feet and shall extend up to the well platform or pump room floor with a water-tight connection. In such case the platform or floor shall have a suitable sleeve pipe surrounding the suction pipe or drop pipe and projecting above as herein provided for a casing pipe.

(g) Cover on floor.—Every well, spring or other structure used as a source of water, or for the storage of water, shall be provided with a water-tight cover or pump room floor constructed of concrete or similarly impervious material so as to provide proper drainage from the cover or floor and so as to prevent contamination of the water supply. Such cover or floor shall be constructed so that there shall be no copings, parapets, or other features which may prevent proper drainage, or by which water can be held on the cover. Well casings shall project at least six inches above the top of this cover or floor, except as noted in (h), and the cover or floor shall slope away from a well casing or suction pipe in all directions, and shall be at least six inches above the ground surface at the outside edges.

(h) Pump-head and base.—Every hand-operated pump shall have the pump-head closed by a stuffing box or other suitable device to exclude contamination from the water chamber. The pump base shall be of ~~solid one-piece~~ recessed type of sufficient diameter and depth to admit the well casing as hereinafter provided. The top of the casing of every well equipped with such a pump shall project into the base of the pump at least one inch above the bottom thereof, and at least one inch above the level of the platform on which the pump rests.

(i) Power-pump base.—Every power-pump shall have a solid, water-tight, metal base without openings, to form a cover for the well, recessed to admit the well casing, and the well casing shall project into the base at least one inch

above the bottom thereof, and at least one inch above the level of the foundation on which the pump rests, which in turn shall be at least five inches above the top of the cover or floor or, in lieu of such base, a separate water-tight, metal cover, into which the casing projects in like manner, may be provided; provided that the base or cover may have an air vent constructed as hereinafter prescribed.

(j) Drainage.—No well head, well casing, pump, pumping machinery, valve connected with the suction pump, or exposed suction pipe, shall be located in any pit, room, or space extending below ground level, or in any room or space above the ground which is walled in or otherwise enclosed so that it does not have free drainage by
2269 gravity to the surface of the ground; provided that this shall not apply to a dug well properly constructed, lined, and covered as herein prescribed.

(k) Manholes.—Manholes may be provided on dug wells, reservoirs, tanks, and other similar features of water supplies. Every such manhole shall be fitted with a water-tight collar or frame having edges which project at least two inches above the level of the surrounding surface, and shall be provided with a solid, water-tight cover having edges which overlap and project downward at least two inches around the outside of the frame. The cover shall be kept locked at all times except when necessary to open the manhole.

(l) Vent openings.—Any reservoir, well, tank, or other structure containing water for any such water supply may be provided with vents, overflows, or water-level control gauges, which shall be constructed so as to prevent the entrance of birds, insects, dust, rain, snow, or other contaminating material. Openings on vents shall be not less than two feet above the floor of a pump room or the roof or cover of a reservoir. Openings on vents located on other structures shall be not less than two feet above the surface on which the vents are located.

(m) Airlift systems.—The air intake for any airlift system or mechanical aerating apparatus shall be at least six feet above the floor surface if indoors, and ten feet above the ground if out-of-doors. The air intake shall be so constructed as to prevent the entrance of birds, insects, dust, rain, snow, or other contaminating material. Every airline system shall be equipped with effective oil traps, tanks, or filters to prevent oil from entering the water.

(n) Lubrication of pump bearings. Pump bearings situated in any well below the pump-room floor shall be lubricated with water taken from within the well, or from the reservoir or distribution system supplied with water from the original source of the water supply, or from another supply approved by the board of health.

(o) Priming of power pumps.—Water for priming pumps on any water system shall be taken directly from the reservoir or distribution system which is supplied with water from the original source of the water supply or from another supply approved by the board of health. Priming devices shall be so constructed as not to expose the water to dust, drippings, or other sources of contamination.

(p) Priming of hand pumps; buckets.—No hand-operated type of pump or cylinder which requires priming shall be used. No pail and rope, bailer, or chain bucket systems shall be used.

(q) Disinfection of water supplies.—New water supplies and water supplies which may have become contaminated accidentally or otherwise shall be thoroughly disinfected before being placed in use. Disinfection shall consist of passing a chlorine solution through all of the units until a chlorine residual of at least one p. p. m. is in evidence at all of the outlets, and the water supply meets the requirements of the board of health.

Item 12r.—Utensils—Construction.

All containers or other utensils used in the handling, storage, or transportation of milk or milk products must be made of nonabsorbent material and of such construction as to be easily cleaned, and must be in good repair. Joints and seams shall be soldered flush. All milk pails shall be of a small-mouth design approved by the board of health.

Public health reason.—Milk containers and other utensils not having flush joints and seams, smooth, easily cleaned, and accessible surfaces, and not made of durable, not readily corrodible metal are apt to harbor accumulations in which undesirable bacterial growth is produced.

Milk pails of small-mouth design, sometimes known as the "hooded milk pail," decrease the chance of hairs, dust, chaff, and other undesirable foreign substance getting into the milk at the time of milking.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All containers, utensils, and other equipment are constructed of heavy-gauge material with a not readily corrodible surface, of a shape which will make cleaning easy, and with all joints and seams soldered flush; and

(2) All containers, utensils, and other equipment are in good repair, free of breaks and corroded places; and

(3) All milk pails are of an approved small-mouth design, and

(4) All other requirements of the board of health are satisfied.

The use of agateware or unsubstantial milking pails is not acceptable.*

The opening of the small-mouth milking pails should be not more than one-third of the area of the top of an open-top pail of the same size. Some patented small-mouth pails, which are designed to hold a strainer cloth, will be approved provided the construction does not include wire screen cloth, and the pails meet the other specifications of this item.

Milking into small cups and pouring into pails will not be approved. If milking machines are used and stripping is done by hand, small-mouth pails shall be used.

All milk cans should preferably have umbrella-type covers.

2270 Item 13r.—Utensils—Cleaning.

All containers and other utensils used in the handling, storage, or transportation of milk and milk products must be thoroughly cleaned after each usage.

Public health reason.—Milk cannot be kept clean in contact with unclean milk vessels and utensils.

Satisfactory compliance. This item shall be deemed to have been satisfied when all containers, utensils, milking machine pails and tubing, etc., used in the handling, storage, or transportation of milk and milk products, are thoroughly cleaned after each milking. Unless utensils are clean to the sight and touch, this item shall be deemed to have been violated.

* The enamel of agateware is subject to chipping, and many unsubstantial pails rarely have the seams filled with solder, and in addition rust easily.

Item 14r.—Utensils—Bactericidal Treatment.

All containers and other utensils, used in the handling, storage, or transportation of milk or milk products, shall between each usage be treated with steam, hot water, or chlorine in a manner approved by the board of health.

Public health reason.—Mere cleansing of containers and utensils does not insure that all disease organisms will have been removed or destroyed. Even very small numbers thus remaining may grow to dangerous proportions in the milk, since many kinds of disease bacteria grow rapidly in milk.

For this reason, all milk containers and utensils must be treated with a bactericidal agent between each usage.

Satisfactory compliance.—This item shall be deemed to have been satisfied if all milk containers, utensils, strainer cloths, etc., have been, in an approved manner:

(1) Exposed for at least 15 minutes to at least 170° F., or for at least five minutes to at least 200° in a steam cabinet; or

(2) Exposed to a jet of live steam or 180° F. water for at least one minute; or

(3) Exposed to a chlorine solution of approved strength for at least two minutes (for approved strength refer to definition of bactericide); or

(4) Immersed in hot water at 170° F. or more for at least two minutes.

The efficiency of the process shall be such as to produce cans having a residual bacterial plate count of not more than one per c. c. of capacity.

Any equipment touched by the inspector shall be again subjected to bactericidal treatment before being used.*

Treatment with chlorine solution.—Containers and utensils may be treated with chlorine solution without special apparatus by filling the rinsing compartment of the washing vat with water containing chlorine solution of standard

* Cabinets with auxiliary steam boilers.—For medium-sized and large dairies this is the most satisfactory *type* of steam cabinet. Everything considered, the most satisfactory construction *material* is wood or metal. A wood cabinet is less durable than one of concrete, brick, or hollow tile, but is, on the other hand, both cheaper to build and cheaper to operate. A metal cabinet is somewhat more expensive to build, but is about as cheap to operate as a wood cabinet.

In the case of concrete, brick, or hollow-tile cabinets, care must be taken to see that the boiler is large enough to provide the extra amount of steam required to offset the greater amount of heat absorbed by the walls of these materials.

strength, and by fully submerging each article to be treated for at least two minutes.

Treatment of equipment other than pails.—Rubber milking-machine parts may be satisfactorily treated by immersing them for two minutes in water brought to 170° F. or leaving them in a standard chlorine solution until the next milking.*

Strainer cloths shall be treated (only after thorough washing) by boiling, or by exposure in steam cabinets, or by immersion in a standard chlorine solution. If treated in the steam cabinet, they must be physically separated from each other to insure free access of steam. Single service sterilized strainer pads are preferred.

Boiling water treatment.—Boiling water treatment shall be accepted as satisfactory compliance when the articles are completely immersed for at least two minutes in water maintained at 170° F. or higher throughout the period of immersion. Pouring hot, or so-called "boiling water," from vessel to vessel is not adequate and will not be accepted.

Item 15r.—Utensils—Storage.

All containers and other utensils used in the handling, storage, or transportation of milk or milk products shall be stored so as not to become contaminated before again being used.

Public health reason.—Careless storage of milk utensils, which have previously been properly treated, is apt to result in recontamination by flies and dust, and thus to render them unsafe.

Satisfactory compliance.—This item shall be deemed to have been satisfied when all utensils and vessels, including strainer cloths, are:

(1) Left in the treating chamber until used, or

(2) Stored in the milk house in a place protected from contamination, not on the floor, inverting such articles as can be inverted. Storage racks shall be constructed of metal, or such other satisfactory material, the surface of which is impervious, smooth, and easily cleanable.

If cotton discs are used, they shall be kept in the original package, protected from contamination, until used.

Milk containers and equipment shall be used for milk handling purposes only.

* Also see Farmers' Bulletin No. 1315.

2271 Item 16r.—Utensils—Handling.

After bactericidal treatment, no container or other milk or milk products utensil shall be handled in such manner as to permit any part of the person or clothing to come in contact with any surface with which milk or milk products come in contact.

Public health reason.—Carrying milk pails by inserting the fingers under the hood, carrying an armful of milk-can covers against a solid shirt or jacket, carrying a strainer cloth over the shoulder or in a pocket, and similar handling of vessels and utensils undo the effect of bactericidal treatment.

Satisfactory compliance.—This item shall be deemed to have been satisfied when none of the above or similar practices is in evidence.

Item 17r.—Milking—Udders and Teats.

The udders and teats of all milking cows shall be clean at the time of milking.

Public health reason.—Cows frequently contaminate their udders by standing in polluted water or lying down in the pasture or barn yard. Unless the udders and teats are carefully cleaned just before milking, particles of filth are apt to drop into the milk. Such contamination of the milk is particularly dangerous because cow manure may contain the organisms of tuberculosis, and polluted water may contain the organisms of typhoid fever and other intestinal diseases.

Satsifactory compliance.—This item shall be deemed to have been satisfied when the cows' udders look and feel clean at the time of milking.

The udders and teats must, in addition to being clean, be treated with the previously described chlorine solution.*

* This precautionary measure has the advantage of giving an additional factor of safety with reference to such disease organisms as are not removed by ordinary cleansing. The measure is best carried out by following the preliminary cleansing by scrubbing the udders and teats with a large cloth saturated with the chlorine solution. The cloth is then wrung as dry as possible, and the bag mopped free of excess solution. After thus treating six or eight cows, a fresh pail of solution should be prepared. This treatment will give quicker and more complete bacterial removal of udder contamination than plain water or soap and water.

An additional precaution is the discarding of the first several streams of milk from each teat. They can be discarded into a calf bucket, and wasting the milk or soiling the floor thereby avoided. This precaution will help keep the bacterial count of the milk low, as it is the first few streams of milk which contain most of the bacteria in fresh milk.

Item 18r.—Milking—Flanks.

The flanks, bellies, and tails of all milking cows shall be free from visible dirt at the time of milking.

Public health reason.—Cleanliness of the cows is one of the most important factors affecting the bacterial count of the milk. Under usual farm conditions, cows accumulate on their bodies quantities of manure, caked mud, dust, chaff, loose hairs, etc. Practically all of these materials carry bacteria and are apt to fall into the milking pail during the process of milking. This may result in contaminating the milk with bacteria.

Satisfactory compliance.—This item shall be deemed to have been satisfied when the flanks, bellies, and tails are free from dirt at the time of milking, as evidenced by sight and touch.

The cows should be cleaned by going over each one with a stiff brush, preferably using water freely at the same time to assist in the cleansing and to prevent dust. Clipping long hairs from the flanks, belly, and bag, and cutting the brush of the tail so that it does not drag, are required. All brushing should be completed before milking is begun.

Item 19r.—Milkers' Hands.

Milkers' hands shall be clean, rinsed with a bactericidal solution, and dried with a clean towel immediately before milking and following any interruption in the mlkinig operation. Wet-hand milking is prohibited. Convenient facilities shall be provided for the washing of milkers' hands.

Public health reason.—The reasons for bactericidal treatment of the hands of milkers are similar to those for bactericidal treatment of the udders. In the course of the preparation for milking, the hands of the milkers have come into contact with almost identically the same kind of materials as may have contaminated the udders. During the course of his duties and natural habits outside of the milking barn, the dairyman's hands must be assumed to have been exposed to body discharges.

Wet-hand milking increases the likelihood of contaminating the milk. Washing facilities are required in order to increase the assurance that milkers' hands will be washed.

Satisfactory complaince.—This item shall be deemed to have been satisfied when:

(1) The milker's hands have been washed with water to which an approved bactericide has been added, and

(2) Are dry at the time of milking, and

(3) Hand-washing facilities, including clean towels, are provided in or easily accessible to the milking barn.

The hands of all milkers must be dipped and washed in a standard bactericidal solution and wiped dry before milking is begun. This applies to the man who handles the milking machines and applies and removes them from the cows, and to the stripper.*

Washing facilities convenient to the barn are required, including either running water or a suitable vessel and an adequate supply of clean water, soap, and a clean cloth or towel for each milker.

Item 20r.—Clean Clothing.

Milkers and milk handlers shall wear clean, washable outer garments while milking or handling milk, milk products, containers, utensils, or equipment.

2272 Public health reason.—Because of the fact that the hands of all workers frequently come into contact with their clothing, it is important that the clothes worn during the milking and handling of the milk be clean.

Satisfactory compliance.—This item shall be deemed to have been satisfied when milkers are found wearing washable outer garments that are not excessively soiled, or when such clothes are found hanging in a clean place in the barn or the milk house.

White suits are not required, but washable over-garments are required.**

If women milkers wear clean aprons, this will be considered as satisfactory.

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*A bucketful of bactericidal solution should be handy in the barn during milking. Every time a milker has finished milking a cow and has removed his stool to the next cow, he should rinse his hands in the solution. The first washing in the solution does not afford subsequent protection against recontamination from the cow's flanks, or even from the clothes and person of the milker.

** A good practice is for milkers to have one suit of overalls for milking and another for general work. The suits are changed just before milking.

Item 21r.—Milk Stools.

Milk stools shall be kept clean.

Public health reason.—Clean milk stools reduces the likelihood of contamination of milkers' hands between the milking of individual cows.

Satisfactory compliance.—This item shall be deemed to have been satisfied when the milk stools are so constructed as to be easily kept clean, look and feel clean, and are stored above the floor when not in use.**

Item 22r.—Removal of Milk.

Each pail of milk shall be removed immediately to the milk house or straining room. No milk shall be strained or poured in the dairy barn.

Public health reason.—Keeping the milk in the barn until all or a large part of the herd has been milked is apt to expose it to flies and dust, and to delay cooling. Straining milk in the barn likewise exposes it to dust and flies.

Satisfactory compliance.—If the milk house and barn are too widely separated to make practicable the straining of milk in the milk house, the construction of a small screened straining room in or near the barn, but not opening directly into it, is satisfactory.***

The use of the feed room or a similar enclosure for a straining room is not approved unless all foodstuffs or other materials are removed, and the room is so located that it does not open directly into the milking barn.

Item 23r.—Cooling.

Milk must be cooled within one hour after completion of milking to 65° F. or less, and maintained at that average temperature, as defined in section 3082(R), until delivery to a milk plant or receiving station, unless it is delivered within one hour after completion of milking.

Public health reason.—Milk produced under cleanly conditions usually contains from 1,000 to 10,000 bacteria per

** The usual practice is to scrub the stools several times a week, and keep them on hooks or pegs when not in use. Otherwise they are inevitably kicked around on the floor or in the gutters, or thrown into a corner, and quickly become soiled. Many dairies are equipped with metal milk stools, which are easy to wash and keep clean.

Milk stools are frequently padded with old carpet or sacking for the comfort of the milkers. Such stools cannot be washed and cannot be kept clean. Their use does not comply with these requirements.

*** This method still has the disadvantage of delaying cooling, though this can be reduced by taking every canful of milk to the milk house as soon as filled.

c. c. immediately after milking. These multiply to enormous numbers in a few hours if the milk is not cooled. When the milk is properly cooled, however, there is but a very slow increase in numbers of bacteria. In order to understand this, it is merely necessary to recall that bacteria are very small plants, and that most plants do not grow in cold weather.

Usually the bacteria in milk are harmless, and if this were always true there would be no reason to cool milk except to delay souring. There is, however, no way for the dairyman or board of health to make absolutely sure that no disease bacteria have entered the milk (even though observance of the other items of these requirements will much reduce this likelihood), and frequent epidemics among milk consumers prove without question that this happens. The likelihood of contracting disease is much increased when the milk contains large numbers of disease bacteria, and for this reason it is extremely important that milk be quickly cooled so that any small numbers of disease bacteria which may have entered shall not be permitted to multiply.

Satisfactory compliance.—This item shall be deemed to have been satisfied when milk delivered to a milk plant or receiving station is either delivered within one hour after completion of milking, or, if delivered after the expiration of one hour, has been cooled before the expiration of one hour to 65° F. or less, and maintained at or below that average temperature until delivery.

The milk temperature should be determined in the following manner. The contents of the can or vat shall be thoroughly stirred before the thermometer is inserted. The stirring dipper or rod may be treated between samples in a five-gallon can of water to which has been added five ounces of standard stock chlorine solution.

Thermometers to Be Used in Determining Milk Temperatures.

Type—Pocket type, mercury actuated.

Magnification of mercury column.—To apparent width of not less than 1/16-inch.

Scale range.—30° F. to 120° F. with extension either side permissive.

Temperature represented by smallest scale division. 1° F.

2273 Number of degrees per inch of scale.—Not more than 32.

Accuracy.—Within 1°F. plus or minus.

Case.—Metal, provided with suspension ring and fountain pen clip.

Bulb.—Corning normal, or equally suitable thermometric glass.

Special Handled Thermometer to Be Used in Platform Determination of Milk Temperatures.

Type.—Long-stem-handle type, mercury actuated.

Magnification of mercury column.—To apparent width of not less than 1/16-inch.

Scale range.—30° F. to 90° F. with extension either side permissive.

Temperature represented by smallest scale division. 1° F.

Number of degrees per inch of scale—Not more than 10.

Accuracy.—Within ½° F., plus or minus.

Bulbs—Corning normal, or equally suitable thermometric glass.

Cooling Methods*

The bottom of the vat may be provided with a removable rack to protect it from undue wear. The vat may be provided with a lid in order to promote cooling. If it be assumed that the thickness of the rack is two inches, the total inside height of the vat from the vat floor to the under surface of the lid should be 30 inches. The vat must be provided with an overflow outlet which, assuming again that the rack is two inches thick, must be 23 inches above the vat floor.

All cooling vats shall be provided with bottom drains to permit emptying and cleaning.

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*Cooling in the vat.—Note: a simple and frequently used method of cooling is to pour the milk as it comes from the barn directly into cans set in a vat of ice or flowing well water, and then to stir the milk thoroughly each time another pailful is added. A can of milk can be cooled in this manner in a short time.

It is recommended that where ice is used, the size of cooling vats be determined from the following tables:

Inside dimensions, in inches, of cooling vats for five-gallon-cans

Number of cans	2	4	6	8
Width	26	26	26	30
Length	36	46	70	80

Inside dimensions, in inches, of cooling vats for eight-gallon and for ten-gallon cans.

Number of cans	2	4	6	8
Width	30	30	36	42
Length	36	60	75	84

The cold water inlet piping should discharge into the bottom of the vat. To promote adequate cooling, dairymen should use motor or engine driven water pumping equipment.

The vat may be constructed of metal, wood, or concrete. Concrete is preferred, built as a unit separate from the walls of the building. Tanks should also be provided with a cover. Cooling is promoted by insulating the vat.*

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*U. S. Department of Agriculture Farmers' Bulletin No. 976 contains the following statement regarding insulated cooling vats:

"While from the point of view of cooling, wooden tanks give good results, an insulated concrete is much more desirable, as it is easily built and can be set partly in the ground. A wooden or galvanized iron tank does not last long under similar conditions. When the tank is set low, cans of milk can be lifted in or out with much less effort than when it is entirely above the ground. The total thickness of the walls of an insulated concrete tank should be 8 inches, divided into two walls, the outside being 2 inches, then 2 inches of good insulating, and the inside wall 4 inches thick. The concrete mix should consist of 1 part Portland cement, 2 parts clean, sharp sand, and 4 parts broken stone or gravel. For the purpose of waterproofing, hydrated lime equal to 10 per cent. by weight of the cement should be added to the mixture. The insulation used should be coated with and set in hot asphalt which should be allowed to become thoroughly dry before the inner walls of the tank are put up. The inside walls should be very carefully trowelled so as to insure a smooth surface without projecting particles."

One good type of insulating material is 2-inch sheet cork. If cork is considered too costly, 2-inch plank, carefully dried and then thoroughly coated on all surfaces with hot asphalt, has probably a fairly high insulating value when imbedded in concrete. Non-insulated vats should be separated from the milk house walls by a dead air space.

The quantity of ice necessary to cool the milk to a certain temperature is dependent upon the size of the vat, the atmospheric temperature, the amount of milk to be cooled, and the extent to which it has been precooled.

Cooling over surface coolers. It is obvious that milk should be cooled more quickly by causing it to flow in a thin film over a metal surface constantly cooled by a cold liquid behind it. The principle has been applied in the so-called surface cooler.

One device for applying this principle is the plain *conical cooler*. This device is usually operated by filling it with a mixture of ice and water and stirring the mixture as the milk flows overs the cooler, or by flowing cold water through it. The advantages of this method of cooling are its low first cost and the fact that milk is cooled more quickly than by the previously described vat method.

Another type of surface cooler, somewhat more expensive in first cost, but better designed, is the corrugated or *tubular cooler*, especially designed to permit the constant flow of water through it while the milk flows over its outer surface. Because of its efficient design, this type of cooler can be made to cool milk to within two or three degrees of the temperature of the water (impossible with conical cooler). This utilizes the maximum cooling effect of the water supply.

Another type of tubular cooler is composed of two sections, uniced water flowing through the upper section, and cold brine or ice water through the lower section. This type also utilizes the full cooling effect of the natural water supply. The principal advantage of this layout lies in the fact that the desired milk temperature is achieved more rapidly than by any other means.

Another type of cooler is the "in-the-can" cooler.

Keeping milk cold.—Dairymen who can deliver milk twice a day to a milk pasteurizing plant or cooling station are not required to cool the milk if it can be delivered within one hour after milking. However, prompt cooling immediately after milking is to be recommended in all cases.

Item 24r.—Proper Feeding.

The cows shall not be fed on slops, refuse of any distillery or brewery, glucose, or on any malt in a state of fermentation, putrefaction or decomposition, or on any putrefying or unwholesome feedstuffs. No dry, dusty, or strong odor feeds shall be fed to the cows immediately before milking.

Item 25r.—Personnel—Health.

Every person connected with a dairy whose work brings him in contact with the production, handling, storage, or transportation of milk, milk products, containers, or equipment shall furnish such information, permit such
2274 physical examinations, and submit such laboratory specimens as the board of health may require.

No person shall spit in any part of any room, vehicle, or other place used for the sale, storage, handling, or transportation of milk or milk products.

Item 26r.—Vehicles.*

All vehicles used for the transportation of milk or milk products shall be so constructed and operated as to protect the milk or milk products from the sun and from freezing, and from contamination. Such vehicles shall be kept clean, and no substance capable of contaminating milk or milk products shall be transported with milk or milk products in such manner as to permit contamination.

Milk haulers shall furnish to the board of health at least once each month a list showing the name and address of each producer whose milk has been hauled during that period, the amount of milk hauled daily, and the name and address of the milk plant supplied with such milk.

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* The condition and appearance of the delivery vehicles do much to credit or discredit milk control in the mind of the consumer. It is important, therefore, in order to encourage the consumption of milk, as well as in order to protect it from contamination during delivery, that inspectors rigidly enforce this item, both as to the cleanly appearance of the vehicle, as to its being the properly covered type, with tight bottom and sides, and as to the carrying of such material capable of contaminating milk supplies.

Requirements for Pasteurization Plants, Etc.

Grade A pasteurized milk shall be pasteurized, cooled, and handled in a milk plant conforming with all of the following items of sanitation and any additional requirements of the board of health. The average bacterial plate count of milk shall at no time after pasteurization and until delivery exceed 30,000 per cubic centimeter, as determined under sections 3082 (R) and 3092.

The requirements for grade A milk products shall be identical with those for milk, except that the bacterial standards shall be doubled in the case of cream, and omitted in the case of sour cream, buttermilk, and cultured buttermilk.

Item 1p.—Floors.

The floors of all rooms in which milk or milk products are handled or stored shall be constructed of concrete or other equally impervious and easily cleaned material and shall be smooth, properly drained, provided with trapped drains, and kept clean.

Public health reason.—Floors constructed of concrete or other similarly impervious material can be kept clean more easily than floors constructed of wood or other pervious or easily distintegrating material, will not absorb organic matter, and are, therefore, more apt to be kept clean and free of odors. Properly sloped floors facilitate flushing, and avoid sloppiness. Trapping of drains prevents sewer gas entering the plant. Clean floors are conducive to clean milk-handling methods.

Satisfactory compliance.—This item shall be deemed to have been satisfied:

(1) When the floors of all rooms in which milk is handled are constructed of good quality concrete, equally impervious tile or brick laid closely with impervious joint material, metal surfacing with impervious joints, or of other material which is the equivalent of good quality concrete; and

(2) When the floor surface is smooth and sloped so that there will be no pools of standing water after flushing, and the joints of the floor and walls are constructed so as to be impervious (a 6-inch cove base to be provided for all floors hereafter constructed); and

(3) When the floors are provided with trapped drains so constructed as to minimize clogging; and

(4) When the floors are kept clean at all times. Floors shall be kept free not only of organic filth, but also of litter. Materials and equipment not routinely used in a given room shall not be stored therein, as this practice renders it difficult to keep the floor clean. Materials and equipment not in routine use shall be stored in a special storage room or rooms in which milk handling operations are not conducted.

Item 2p.—Walls and Ceilings.

Walls and ceilings of rooms in which milk or milk products are handled or stored shall have a smooth, washable, light-colored surface in good repair and be kept clean.

Public health reason.—Painted or otherwise properly finished walls and ceilings are more easily kept clean and are therefore more apt to be kept clean. A light-colored paint or finish aids in the even distribution of light and the detection of unclean conditions. Clean walls and ceilings are conducive to clean milk-handling operations.

Satisfactory compliance.—This item shall be deemed to have been satisfied if walls and ceilings are finished with light-painted wood, impervious, smooth tile, smooth-surface concrete or cement plaster, brick, or other equivalent materials with a washable light-colored surface, and walls and ceilings are kept clean and refinished as often as the finish wears off or becomes discolored.

Pipes other than milk lines shall be kept painted with a durable paint.

Item 3p.—Doors and Windows.

All openings into the outer air shall be effectively screened to prevent the access of flies. Doors shall be self-closing.

2275 Public health reason.—Flies may infect the milk with disease germs after it has been pasteurized, thus nullifying the effectiveness of pasteurization.

Satisfactory compliance.—This item shall be deemed to have been satisfied:

(1) If all openings to the outer air are effectively screened; or

(2) If fans of sufficient power to prevent the entrance

of flies are in use at all ineffectively protected openings; and

(3) If all doors are self-closing, and all screen doors to the outer air open outward.

Openings through which cans or crates or other articles are loaded in rapid succession so as to make impracticable the proper use of self-closing screens may be protected by properly constructed flaps or by fans of sufficient power to prevent the entrance of flies. Such fans must be operated at all times when doors are open.

Window and door screens must be tight-fitting and free of holes. This includes the screens for skylights and transoms.

This item must be satisfied during the seasons of the year when flies are evident.

Item 4p.—Lighting and Ventilation.

All rooms shall be well lighted and ventilated.

Public health reason.—Ample light promotes cleanliness. Proper ventilation reduces odors and prevents condensation upon interior surfaces.

Satisfactory compliance.—This item shall be deemed to have been satisfied:

(1) If artificial light is provided equivalent to one 50-watt electric light per 100 square feet of floor area, reasonably evenly distributed.

(2) If the unobstructed window or skylight space in each room of pasteurization plants (except refrigerator) hereafter constructed is not less than 10 per cent. of the floor area of said room, and the light is reasonably evenly distributed so that all operations and equipment are adequately lighted.

(3) If all rooms are adequately ventilated, in the opinion of the inspector, and ample to prevent undue condensation upon interior surfaces. Ventilation equipment supplementary to windows and doors is to be provided if necessary.

(4) If the excess steam from equipment is exhausted elsewhere than in the milk-handling room.

(5) When lighting and ventilation complies with ordinances of the City of Chicago and the rules and regulations of the board of health.

Item 5p.—Protection From Contamination.

The various milk-plant transportation, storage, and distribution operations shall be so located and conducted as to prevent any contamination of the milk or of the cleaned equipment. All means necessary for the elimination of flies shall be used. This requirement shall be interpreted to include separate rooms for (a) the pasteurizing, cooling, and bottling operations; (b) the washing and bactericidal treatment of containers and equipment. Cans of raw milk shall not be unloaded directly into the pasteurizing room. Pasteurized milk or milk products shall not be permitted to come in contact with equipment with which unpasteurized milk or milk products have been in contact, unless such equipment has first been thoroughly cleaned, and subjected to bactericidal treatment. Rooms in which milk, milk products, cleaned utensils, or containers are handled or stored shall not open directly into any stable or living quarters.

Public health reason.—If the washing and bactericidal treatment of containers are conducted in the same room in which the pasteurizing, cooling, or bottling is done, there is opportunity for the pasteurized product to become contaminated, particularly by flies. For this reason, separate rooms are required as indicated. The unloading of cans of raw milk directly into the pasteurizing room is apt to increase the prevalence of flies therein and to render it too public.

Sometimes, simple screening is not sufficient to keep out flies. For this reason, other methods are required if screening proves insufficient.

Satisfactory compliance.—This item shall be deemed to have been satisfied under the following conditions:

(1) The plant contains sufficiently large separate rooms for (a) the pasteurizing, cooling, and bottling operations, and (b) the washing and bactericidal treatment of containers. The pasteurizing, cooling, and bottling operations may be conducted as a group in a single room, if desired, and the washing and treatment of containers may be conducted in a single room; but the two groups of operations must be kept in separate rooms.

(2) Cans of raw milk are unloaded either into a room separated by solid or screened partitions from the pasteurizing room, or upon an outside platform and then

pushed through a flap or fan-protected opening into the receiving or pasteurizing room. The purpose of this provision is to prevent the unloading of cans directly from the trucks through open doors into the pasteurizing room, which would make the pasteurizing room too public.

(3) All equipment with which milk comes in contact is covered and otherwise protected to prevent the access of flies, dust, and other contamination during operation. Receiving or dump vats shall be completely covered ex-
2276 cept during washing and bactericidal treatment, and except when milk is being received or sampled, when openings of sufficient size for these purposes may be uncovered.*

(4) All necessary means supplementary to the use of screens are used for the elimination of flies.

(5) Pasteurized milk shall not be strained or filtered except through a metal strainer constructed of not readily corrodible material other than woven wire.

(6) Pasteurized milk or milk products are not permitted to come into contact with equipment with which unpasteurized milk or milk products have been in contact. There shall be no raw milk by-pass around the pasturization holder.

(7) Rooms in which milk or milk products or cleaned utensils or containers are handled or stored shall not open directly into any stable or living quarters.

No milk plant or any room thereof shall be located in such manner as to permit of contamination to the milk or milk products.

The provision of a receiving room separate from rooms (a) and (b) defined above in item 5p, containing a dump vat, the milk from which is piped into the pasteurizing room, is urged, and is required in all existing plants receiving 200 gallons or more of milk daily. In all proposed plants, requirement is mandatory. A separate room or rooms for boilers and fuel is required.

If the design of the plant provides for pasteurizing or other equipment upon an elevated platform or mezzanine floor, the construction must be such as to prevent contami-

* For protection during cooling, see item 17p; for protection during bottling, see item 18p.

nation of equipment on the lower floor from cleaning or other operations on the upper floor.

Item 6p.—Toilet Facilities.

Every milk plant shall be provided with adequate, conveniently located toilet facilities conforming with the ordinances of the City of Chicago, and the requirements of the board of health. There shall be at least one room or vestibule not used for milk purposes between the toilet room and any room in which milk or milk products are handled or stored. The doors of all toilet rooms shall be self-closing. Toilet rooms shall be kept in a clean condition, in good repair, and well ventilated. In case privies or earth closets are permitted by the board of health, they shall be separate from the building, and shall be of a sanitary type constructed and operated in conformity with the requirements of item 10r, grade A pasteurized milk.

Public health reason.—The need for toilet facilities and the necessity for protecting the plant processes from toilet-contaminated flies are obvious.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) Adequate, conveniently located toilet facilities complying with the city plumbing code are provided, and

(2) There is at least one room or vestibule not used for milk purposes between the toilet room and any room in which milk, milk products, or equipment used in connection therewith are handled or stored, and

(3) The toilet-room doors are provided with springs or checks to make them self-closing, and

(4) The toilet-room, stool, etc., are kept clean, sanitary, and in good repair, and

(5) The toilet room is well ventilated and free from flies.

(6) Durable, legible signs are posted conspicuously in each toilet room directing the employes to wash their hands before returning to work.

A booth open at the top shall not qualify as a toilet room, as understood in this item.

Privies, if permitted, shall be constructed and operated in accordance with the requirements of item 10r, grade A Pasteurized Milk.

Item 7p.—Water Supply.

The water supply shall be easily accessible, adequate, and of a safe, sanitary quality.

Public health reason.—The water supply should be accessible so as to encourage its use in cleaning operations, it should be adequate so that cleaning and rinsing will be thorough, and it should be of safe, sanitary quality in order to avoid the infection of milk equipment and containers.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All milk-handling rooms of the pasteurizing plant are provided with an adequate number of water outlets, and

(2) The water supply is ample in quantity to insure proper cleaning of the plant and its equipment, and

(3) The water supply is approved as safe by the board of health and conforms with the specifications contained under item 11r, Water Supply, Grade A Pasteurized Milk, Satisfactory compliance, paragraph (4).

2277 Item 8p.—Hand-Washing Facilities.

Convenient hand-washing facilities shall be provided, including hot running water, soap, and sanitary towels of a type approved by the board of health. The use of a common towel is prohibited.

Public Health reason.—Washing facilities and sanitary towels are essential to the personal cleanliness of the milk handlers.

Satisfactory compliance.—This item shall be deemed to have been satisfied if hand-washing facilities, including hot and cold running water, soap, and individual cloth or paper towels, are provided. Washing facilities must be convenient. Bottle or can-washing vats shall not be accepted as washing facilities for personnel. Hot water must be on hand at all times, or within a reasonable time after opening the faucets. Soap and towels should be provided by the plant management. No employe shall return from a toilet to a room where milk or milk utensils are handled without first having washed his hands.

Item 9p.—Milk Piping.

Only "sanitary milk piping" of a type which can be easily cleaned with a brush shall be used.

Public health reason.—Milk piping and fittings are sometimes so designed as to be difficult to clean or they may be constructed of metal which corrodes easily. If piping and fittings are used which are difficult to clean or which corrode easily, or if exceptionally long lines or individual lengths of piping are used, it is unlikely that they will be kept clean. So-called "sanitary milk piping" is a term which applies to properly designed standard equipment.

Satisfactory compliance.—This item shall be deemed to have been satisfied:

(1) When the milk piping, fittings, and connections are of such a diameter and so designed as to permit easy cleaning with a brush; and

(2) When the milk piping and connections have a heavy not readily corrodible smooth finish, and all sweated connections are soldered smooth and flush; and

(3) When the connections are of such design as to avoid sharp corners or crevices which are difficult to clean; and

(4) When all parts of interior surfaces of pipe or fittings (including valves, fittings, and connections) are of such size and shape as to be accessible either to the sight or the touch, thus making it possible to determine whether they are clean. Bent or dented milk piping shall be considered as violating this item. Except in small installations, at least 1½-inch piping should be used; and

(5) When the length of the individual sections of milk pipe lines is reduced to the minimum practicable.

Item 10p.—Construction and Repair of Euipment and Containers.

All equipment and containers with which milk or milk products come in contact shall be constructed in such manner as to be easily cleaned and shall be kept in good repair.

Public health reason.—If the equipment is not so constructed that it can easily be cleaned, and is not kept in good repair, it is unlikely that it will be properly cleaned.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All surfaces with which milk comes in contact consist of smooth, not readily corrodible metal or unbroken vitreous material, and

(2) All joints are soldered flush with the surface or otherwise fitted to avoid open seams, or the surface, if vitreous, is continuous, and

(3) All surfaces with which milk or milk products come in contact are easily accessible for cleaning, and are self-draining, and

(4) All containers and other equipment are in good repair, free of breaks and corroded places, and

(5) All equipment and containers used are approved by the board of health.

The above requirements preclude the use of milk pumps which are not constructed of smooth, not readily corrodible metal, and all parts of which cannot be readily taken apart for cleaning.

The above requirement also precludes the use of any type of equipment so designed as to permit milk or milk products routinely to come in contact with threaded surfaces.

In all cases where a rotating shaft is inserted through a surface with which milk or milk products come in contact, the inspector shall assure himself that the joint between the moving and sationary surfaces is close fitting.

In cases where the thermometer bulbs are inserted through the surfaces with which milk or milk products come in contact, the thermometer bulb shall be provided with a pressure-tight seat ahead of all threads or crevices.

The covers and caps of all cans used for milk and milk products are to be so constructed and designed to prevent the possible contamination of the milk or milk products enclosed therein. New cans used as milk and milk products containers shall have umbrella-type covers, and all such cans shall be of a type approved by the board of health.

2278 Item 11p.—Disposal of Wastes.

All wastes shall be disposed of in conformity with the requirements of the board of health.

Public health reason.—The wastes resulting from the cleaning and rinsing of containers, equipment, and floors, from flush toilets, and from washing facilities, should be properly disposed of so as not to create a nuisance or a public health menace.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All wastes are disposed of in a public sewer, or

(2) In the absence of a public sewer, all wastes are disposed of by a method approved by the board of health; and

(3) No trash or refuse is present upon the plant premises except in properly covered containers.

Item 12p.—Cleaning and Bactericidal Treatment of Containers and Apparatus.

All milk and milk products containers and apparatus shall be thoroughly cleaned after each usage and subjected immediately before each usage to a bactericidal treatment approved by the board of health.

Public health reason.—Milk and milk products cannot be kept clean and safe if permitted to come into contact with containers and apparatus which have not been properly cleaned and treated. By bactericidal treatment is meant the destruction of such pathogens as are transmissible through milk supplies and all other organisms so far as practicable.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All containers are thoroughly cleaned after each usage, and all apparatus is thoroughly cleaned once each day on a clean support, such as a tank or rack (not the floor). Greasy or rough surfaces shall not be considered sufficiently clean. All demountable apparatus shall be taken down each day for cleaning, including thermometer fittings where pressure-tight seats are not employed. The storage on racks of all demountable apparatus until just before bactericidal treatment and usage is urged.

(2) All containers are given bactericidal treatment after each usage, and all apparatus is given bactericidal treatment at least once each day immediately before the beginning of the day's operations, in the following manner:

Bactericidal treatment of entire assembled equipment immediately prior to day's run.—The bactericidal treatment of the entire assembled equipment immediately prior to the day's run is required. This may be done by means of steam, hot water, or chlorine solution, as follows:

If steam is used, each group of assembled piping shall be treated separately by inserting the steam hose or pipe into the inlet and maintaining steam flow from the outlet for five minutes after the temperature of the steam at the

outlet has reached 200° F. (The period of exposure required here is longer than that required for individual cans, etc., because of the heat lost through the large surface exposed to the air.) Any completely enclosed equipment continuous with the pipe system, and under pressure from the pipe system, such as pre-heaters, pumps, filters, valves, tubular holders, regenerative heater-coolers, etc., may be considered as having been adequately treated by means of the above procedure. Covers and other closures and unions should be cracked loose to insure joints being thoroughly steamed, and to lessen expansion and contraction cracks or strains.

Equipment not under pressure from the pipe line, such as weigh cans, storage vats, fore-warmers, clarifiers, separators, pasteurization vats and pockets, coolers, and bottlers, must be treated separately.

Coolers should either be drained of refrigerant and the refrigerant valves closed before treatment, or the refrigerant intake valve closed and the return valve left open to provide for the expansion of the refrigerant. Covers must be in place during treatment.

If hot water is used, this may be done by pumping hot water through the entire equipment, the temperature of the water and the period of pumping being such that the temperature of the water at both the inlet and the outlet end of the assembly will have been at least 170° F. for at least five minutes.

When the assembly is so long that it is difficult to secure this temperature and time at the outlet end, the equipment should be treated in sections.

Supplementary treatment should be applied to any holder or to any other equipment, the entire surface of which is not reached by the hot water.

Coolers should either be drained of refrigerant and the refrigerant valves closed before treatment, or the refrigerant intake valve closed and the return valve left open to provide for the expansion of the refrigerant. Covers, which must have been separately treated previously, must be in place during treatment of the cooler proper. Care should be taken to see that the hot water covers the entire surface of all coolers.

2279 If chlorine solution is used, it shall be of such a strength that the solution appearing at the outlet end will show at least 50 parts per million of available chlorine.

The chlorine solution should be pumped through the entire equipment for at least five minutes.

Here again, such surfaces as are not reached by the chlorine solution shall be treated with steam as previously described, or the spray method of applying chlorine solution may be used for such surfaces as are not reached by the flowing chlorine solution.

Bottler treatment.—The bottler must be completely assembled before using any of the above methods. In the case of hot water or chlorine treatment, the bottler must be operated during the process so as to insure bactericidal treatment of all valves and fittings. This is not necessary in the case of steam treatment, but in this case the valves must be individually treated in place. This operation can be made most effective by attaching a device to the end of the steam hose which will enclose the valve and confine the steam.*

Bottle and can treatment.—Small plants, for which automatic washers may be deemed too large may wash their bottles manually and for these the use of the steam cabinet, of an individual hot water or steam-jet plate provided with a hood, or of chlorine immersion-type apparatus, is accepted as compliance.

Larger plants may use automatic washers which include steam, hot water, or chlorine treatment, the use of a strong alkali solution making it possible to use a shorter exposure period for the final treatment. The following requirements shall apply in the operation of soaker-type washers:

(1) The proportion of caustic alkali in relation to soda ash shall be at least two to one.

(2) The amount of caustic alkali permitted is a minimum of 1.6 per cent. reckoned as NaOH.

(3) The minimum temperature of the soaker solution shall be 120° F.

(4) Bottles shall be submerged within the caustic solution for at least 5 minutes.

(5) Final sterilization of the bottle shall be by means

* Thermophiles.—If the pasteurization plant becomes infected with thermophilic organisms, it may prove that more intensive bactericidal treatment or a change in methods may be necessary. If the steam or hot water method has been in use, an attempt should be made to use higher temperatures and for longer periods (above 200° F. for more than ten minutes).

of live steam, hot water, or an approved solution containing not less than 50 parts per million of available chlorine.

A suitable device for testing the amount of caustic alkali present in the solution shall be provided and used daily. The alkali solution shall be renewed at least every two weeks or oftener when deemed necessary by the board of health.

The bacteriological examination shall show that the effect of the combination of the various agents is such as to produce bottles and cans having a residual bacterial plate count of not more than one per c. c. of capacity. After bactericidal treatment, cans shall be so treated as to dry rapidly. Cans returned to the producer or milk plant by the distributor shall be thoroughly dried after bactericidal treatment.

No bottles, cans, or other containers, which the inspector deems grossly contaminated, shall be introduced into the customary container washing section of the milk plant or the equipment or rooms in which milk is handled. All such bottles shall be washed in a separate part of the milk plant or other suitable location, designated for that purpose and approved by the board of health.

Item 13p.—Storage of Containers.

After bactericidal treatment, all bottles, cans, and other milk or milk products containers shall be stored in such manner as to be protected from contamination.

Public health reason.—If milk containers are not protected from contamination, the value of bactericidal treatment will be partly or entirely nullified.

Satisfactory compliance.—This item shall be deemed to have been satisfied if all bottles, cans, and other containers are stored in crates or on sanitary racks in a clean place protected from flies, splash, and dust. Such containers as can conveniently be inverted shall be stored in an inverted position.

Floors of any room shall not be flushed when crates of cleaned bottles are stacked thereon.

Item 14p.—Handling of Containers and Apparatus.

Between bactericidal treatment and usage, containers and apparatus shall not be handled in such manner as to permit any part of the person or clothing to come in contact

with any surface with which milk or milk products come in contact.

Public health reason.—Carrying bottles by inverting fingers into the mouths, running the hands over the surfaces of milk coolers, bottling machines, or pasteurization equipment, or allowing the clothing to brush against cleaned surfaces with which milk or milk products come in contact, will obviously nullify the effect of bactericidal treatment.

Satisfactory compliance.—This item shall be deemed to have been satisfied if the inspector is assured that the employes of the pasteurization plant are using every reasonable precaution to prevent the milk-contact surfaces
2280 of containers and apparatus from coming into contact with their persons or clothing between the time they are given bactericidal treatment and the time they are again used.

Cans used for milk and milk products and which employ paper or parchment covers or caps shall have such covers or caps placed thereon by mechanical means approved by the board of health.

Item 15p.—Storage of Caps and Parchment Paper.

Milk bottle caps and parchment paper for milk cans shall be purchased and stored only in sanitary tubes and cartons, respectively, and shall be kept therein until used.

Public health reason.—Soiled or contaminated caps nullify the benefits of the safeguards prescribed throughout the regulations, and packing the caps in tubes which are unbroken until they are placed in the bottling machine is the best manner of assuring cap cleanliness. This is similarly true of parchment paper for milk cans.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All bottle caps are purchased in tubes, and all parchment paper for milk cans is purchased in cartons, and

(2) The tubes and cartons are stored so as to be kept clean in a locked room, and

(3) All caps kept at the bottling machine are protected from contamination, and

(4) Plant employes, other than those directly engaged in the bottling and capping process, do not have access to the caps or the cap storage room.

The storage of cap tubes or parchment-paper cartons in dusty places or the refilling of tubes or cartons with spilled caps or papers violates this item. At the beginning of each run, the first cap or the first paper shall be discarded, as it is exposed and may be contaminated.

Item 16p.—Pasteurization.

Pasteurization shall be performed as described in section 3082 (K) of this ordinance. The time and temperature record charts shall be dated and transmitted to the board of health weekly.

No milk or milk products shall be pasteurized more than once, except as may be specifically permitted by the board of health.*

Satisfactory compliance.—This item shall be deemed to have been satisfied if the design and operation of the pasteurization apparatus meets the following specifications:

16p(a)—Indicating and Recording Thermometers.

Both indicating and recording thermometers shall be installed and used on each holder in which the holding time is not automatically controlled. Both indicating and recording thermometers shall be installed and used in both inlet and outlet manifolds of 30-minute holders in which the milk is brought to the final pasteurization temperature before entering the holder, and in which the holding time is automatically controlled. The following specifications shall be complied with in the case of all new equipment and in the case of all replacements of indicating and recording thermometers. They shall also apply to all repairs of recording thermometers requiring a renewal of the tube system. The accuracy specifications shall apply to old as well as new equipment.

The bulb of the indicating thermometer shall be located as near as practicable to the recording thermometer bulb. The outlet shall also be equipped with a recording thermometer which satisfies at least the following specifications. The bulb of the recording thermometer shall be integral with, or located as near as practicable to, the bulb of the automatic milk-pump stop.

* See definition of pasteurization in Section 3082 (K).

Indicating Thermometers Located on Pasteurization Vats or Pockets.

Type.—V-shaped brass or equally non-corrodible scale case, with removable glass front, mercury actuated, line etched in glass tube at 143½° F., or other point, approved by the board of health, filling above mercury, nitrogen or equally suitable gas.

Magnification of mercury column.—To apparent width of not less than 1/16-inch.

Scale range.—130° F. to 210° F., extension either side permissive, protected against damage at 220° F.

Temperature represented by smallest scale division.—Not more than 1° F.

Number of degrees per inch of scale.—Not more than 16.

Accuracy.—Within ½° F., plus or minus, between 142° F. and 145° F.

Submerged stem fittings.—Pressure-tight seat against inside wall of holder. No threads exposed to milk. Location of seat to conform to that of standard I. A. M. D. wall-type fitting.

Bulb.—Corning normal, or equally suitable thermometric glass.

Indicating Thermometers Located on Pasteurization Pipe Lines.

Type.—V-shaped brass or equally non-corrodible scale case, with removable glass front, mercury actuated, 2281 line etched on stem at 143½° F., or other point approved by the board of health, filling above mercury, nitrogen or equally suitable gas.

Magnification of mercury column.—To apparent width of not less than 1/16-inch.

Scale range.—138° F. to 165° F., with extension on either side permissive, protected against damage at 220° F.

Temperature represented by smallest scale division.—0.5° F.

Number of degrees per inch of scale.—Not more than 8.

Accuracy.—Within 0.5° F., plus or minus, throughout specified scale range.

Stem fittings.—Pressure-tight seat against inside wall of fittings; no threads exposed to milk; distance from under side of ferrule to top of bulb not less than 2 inches.

Thermometric lag.—When thermometer is at room temperature and then immersed in a well-stirred water bath maintained at a temperature at which the thermometer to be tested reads 160° F., the time required for the reading to increase from 141° F., to 153° F. shall not be more than 4 seconds.

Bulb.—Corning normal, or equally suitable thermometric glass.

Once each month, the board of health shall check the accuracy of all indicating thermometers at the legally required temperature of pasteurization by means of a standardized thermometer reading within 0.2° F. In the case of indicating thermometers located on vats or pockets, this may be done by lowering a standardized maximum self-registering test thermometer to the position of the bulb of the indicating thermometer in the holder during the holding period with the milk in agitation. In the case of indicating thermometers located on pipe lines, this may be done by fitting the indicating thermometer to a sanitary cross and inserting a standardized test thermometer through a thermometer holder (I. A. M. D. fitting No. 55-A) equipped with a rubber washer for holding the thermometer in place against pressure in the milk line, and attached to one of the arms of the cross by means of a union nut (I. A. M. D. fitting No. 13).

The inspector shall identify, by number, seal, or otherwise, the indicating thermometer when tested.

Inspectors' Maximum Self-Registering Thermometers To Be Used in the Testing of Indicating Thermometers on Pasteurization Vats or Pockets.

Type.—Maximum self-registering, mercury actuated, pocket type, readily cleanable.

Magnification of mercury column.—To apparent width of not less than 1/16-inch.

Protection against high-temperature damage.—At 155° F.

Scale range.—138° F. to 148° F., with extension of scale on either side permissive, 138° point to be not less than 1-inch above contraction.

Temperature represented by smallest scale division.—0.2° F.

Number of degrees per inch of scale.—Not more than 6.

Accuracy.—Within 0.2° F., plus or minus, between 142° F. and 145° F.

Case.—Metal, provided with suspension ring and fountain pen clip.

Armor.—Thermometers, if armored, to be easily removable for cleaning, armor to be fenestrated opposite thermometer bulb; scale to be visible without removing armor.

Bulb.—Corning normal, or equally suitable thermometric glass.

The maximum self-registering test thermometers should be checked against themselves occasionally for failure to hold reading when taken from the liquid in which they have been immersed. This may be done by holding them in clean water at approximately 142° F., reading the temperature while immersed, and then reading the temperature again after the thermometer has been removed from the water.

Inspectors' Thermometers To Be Used in the Testing of Indicating Thermometers Located on Pasteurization Pipe Lines.

Type.—Mercury actuated, readily cleanable, plain front, enameled back, top finished with glass ring, length 12 inches, standardized for 4-inch immersion, immersion point to be etched on stem contraction chamber to be of narrow type immediately above bulb, not over 1 inch long, mercury to stand in contraction chamber at 32° F.

Protection against high temperature damage.—At 220° F.

Scale range.—138° F. to 165° F., with extension of scale on either side permissive, 138° point to be not less than 1 inch above immersion line.

Temperature represented by smallest scale division.—0.2° F.

Number of degrees per inch of scale.—Not more than 6.

Accuracy.—Within 0.2° F., plus or minus, throughout specified scale range.

Carrying case.—Felt-lined metal.

Bulb.—Corning normal, or equally suitable thermometric glass.

Recording Thermometers for Pasteurization Apparatus.

Case.—Moisture proof (under operating conditions obtaining in pasteurization plants).

2282 Scale range.—100° F. to 150° F. with extension of scale on either side permissive.

Temperature represented by smallest temperature—scale division.—1° F. between 142° F. and 145° F.

Length of 1° F. scale division.—Not less than 1/16-inch between 142° F. and 145° F.

Time represented by smallest time-scale division.—Not more than 10 minutes.

Chord or straight-line length of 10-minute scale division.—Not less than ¼-inch between 142° F. and 145° F.

Accuracy.—Within 1° F., plus or minus, between 142° F. and 145° F. The accuracy may be determined by the following mode of procedure:

(1) The instrument shall be adjusted to read correctly (if necessary) at some point between 142° F. and 145° F., while it is connected, with the pasteurization apparatus, and as shown by the tested indicating thermometer after a stabilization period of five minutes at constant temperature with the agitation device in operation.

(2) The bulb shall be removed from the pasteurizer and immersed for not less than five minutes in boiling water.

(3) The bulb shall then be immersed for not less than five minutes in melting ice.

(4) The bulb shall be again connected with pasteurizer, and temperature brought to a point between 142° F. and 145° F., as shown by the tested indicating thermometer under the same test conditions outlined under No. (1). At this time the deviation of the recording thermometer reading from that of the indicating thermometer shall not be more than 1° F., plus or minus.

Pen arm setting device.—Designed to give line not over 1/40-inch thick when in proper adjustment, which shall be easy to maintain.

Pen and chart paper.—Designed to give line not over 1/40-inch thick when in proper adjustment, which shall be easy to maintain.

Pressure system (bulb, tube, spring, etc.).—Protected against damage at bulb temperature at 220° F.

Stem fitting.—Pressure-tight seat against inside wall of holder or pipe. No threads exposed to milk. Location of seat in batch-type pasteurizers to conform to that of a standard I. A. M. D. wall-type fitting.

Chart speed.—The chart shall make one revolution in 12 hours, and shall be graduated for a 12-hour record.

Record of pump operation.—For continuous-flow installations there shall be recorded upon the recording thermometer chart the full record of the time during which the milk pump is in operation.

Checking setting of recording thermometers daily.—The setting of recording thermometers shall be checked against the indicating thermometers daily by the plant operator, and at least bi-weekly by the board of health, and shall be kept adjusted so as at no time to read higher than the indicating thermometer.

16p(b)—Maintenance of Pasteurization Time and Temperature.

Maintaining minimum legal pasteurization temperature.—The pasteurization equipment shall be operated so that the indicating thermometers and the recording thermometer charts both read at least the temperature which the definition of pasteurization requires the thermometers to show continuously throughout the holding period, and while milk or milk products are passing the outlet of the holder. The indicating and not the recording thermometer shall be used as an index of temperature by the plant operator.

The board of health shall accept only designs of equipment which have shown, on official test, a deviation between the hottest and coldest particles of milk or milk products of not more than 1° F. For all existing installations provided with the agitation devices and for all new equipment, agitation throughout the holding period shall be required.

All apparatus in which the milk or milk products are brought to the final pasteurization temperature before entering the holder, shall be equipped with an automatic milk-pump cutout device located at the holder inlet, and so adjusted that the milk pump will stop before or when the legal temperature of pasteurization is reached during descending temperatures, and will not start before the legal

temperature of pasteurization is reached during ascending temperatures. The accuracy of the cut-out and cut-in responses shall be tested daily by the plant operator at the beginning of the day's run, and at least monthly by the board of health. The temperatures at which the cut-out and cut-in responses occurred shall be entered by the operator upon the recording-thermometer chart.

The milk-pump stop shall be so designed as to make it impossible for the plant operator to lower the temperature at which it operates without the consent of the board of health. This may be done by means of a lock, the key of which will be in the possession of the board of health, by means of a seal, or by means of any other device approved by the board of health.

Maintaining minimum holding period (non-automatic).—
Holders, in which the holding time is not automat-
2283 ically controlled, shall be so operated that the record
charts will indicate the above required temperature for a period of 30 minutes, provided that holders, in which cooling in the vat is begun after the outlet valve is opened, shall be held at the required temperature for an additional period of time equal to the emptying time. In these cases, the normal emptying time for each holder to the level of the recording thermometer bulb in the vat shall be determined by the inspector. If cooling is begun simultaneously with the opening of the outlet valve, the recording thermometer chart shall show a holding time of 33 minutes. No milk shall be added to the vat after the pasteurization temperature has been reached.

Maintaining minimum holding period (automatic).—For designs in which the holding period is automatically controlled, the recording thermometer charts are not required to show evidence of the holding period, but the following specifications shall be fulfilled:

Tubular holders shall be constructed and equipped in a manner to insure that every particle of milk or milk products will be held for the required period. In order to meet this requirement, the holder shall be equipped at both inlet and outlet ends with a pump geared directly to a properly timed constant-speed induction motor, except that in the case of installations in which the holder empties by gravity, the outlet pump is not required. In the latter case, the valve on the outlet piping shall be of such a size and so constructed that every particle of milk issuing from the

holder during the emptying period will have been held in the holder for the legally required holding period.

Pocket-type holders shall be equipped with a timing device operated by a constant-speed motor so that every particle of milk or milk products will be held for the legally required holding period. The interval between the closing of the inlet valve and the opening of the outlet valve must be not less than 30 minutes.

Immediately after installation or any replacement, or alteration in design or arrangement, each pasteurizer shall be tested by the board of health for compliance with the required detention requirement. The test shall be made at the highest pump speed, with all valves and any other flow-impeding devices open to their fullest extent, and in case filters are used, with a new filter in place. The holding time determined shall be for that part of the system lying between the bulb of the holder-inlet recording thermometer and the cooler inlet.

In the case of pocket-type installations, this may be done by checking the timing device with a watch.

In the case of tubular holders, this may be done by means of either chloramine, uranine or starch-iodide. When the chloramine, uranine, or starch-iodide methods are used, the solution may be pumped through the holder at the pasteurization temperature.*

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* The following is a suggested method of testing by means of chloramine, uranine, or starch solutions:

A cap on the inlet pipe to the holder is drilled to receive a straightway pet cock for use with a large-size (at least 100 c. c.) syringe. The needle is not required, as the glass nipple of the syringe, provided with a rubber washer, can be inserted directly into the pet cock, thus increasing the speed of injection.

The syringe is filled with a saturated solution of chloramine, uranine, or starch, and the solution injected after the installation is in smooth operation with water at the pasteurization temperature. The time of beginning injection must be observed accurately.

Twenty-five minutes after the solution has been injected, the taking of samples at the outlet end of the holder is begun and continued at 30-second intervals. These samples are tested for the presence of chloramine, uranine, or starch. The difference in time between injection and appearance at the effluent end is the observed holding time.

The holding time during filling or emptying of the holder may not be identical with the holding time observed for normal flow conditions.

The holding time during filling may be determined by (1) injecting the solution 10 minutes after filling has begun; (2) opening the effluent valve and beginning routine flow through the holder as soon as the holder is full, but not before the lapse of 30 minutes from the beginning of the filling; and (3) taking samples at the effluent end at 30-second intervals from and after 25 minutes from the time the solution was injected. The holding time is then computed as before.

The holding time during emptying may be determined by injecting the solution at the moment the emptying operation begins, and observing the time taken to reach the effluent end by taking samples as before.

Recording thermometer charts.—All recording thermometer charts shall be transmitted weekly to the board of health. All charts shall contain the following information:

(1) Date.

(2) The number of the pasteurizing vat or installation to which the thermometer is attached, in case more than one pasteurizer is in operation at the plant. In the case of continuous-flow tubular or pocket-type installations, the chart shall indicate whether the thermometer concerned is located at the inlet or the outlet end of the installation.

(3) The temperature shown by the indicating thermometer and the corresponding time indicated by the recording thermometer, taken at some time during the day when the indicating thermometer shows the legally required minimum temperature of pasteurization.

(4) The permit number.

(5) The kind of product pasteurized.

16p(c)—Inlet and Outlet Valves.

Design

Leak-protector inlet and outlet valves or devices shall be provided for each vat or pocket of vat and pocket-type installations, except in the case of existing single-vat installations.

In all cases, close-coupled outlet valves shall be required. A close-coupled valve shall mean a valve so designed that the milk nearest its face will not be more than 1° F. colder than the hottest milk in the holder, when the latter is operated as specified in these regulations.*

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Operation

Disconnection of single-vat holders from inlet and outlet piping.—Single-vat installations, not provided with leak-

* The reason for the first requirement is that no ground-surface valve will long remain leak-proof. If the valve in question is an inlet valve connected to the raw supply, the raw milk will leak into the pasteurizing chamber during the holding and emptying periods. This leakage will, of course, not have been pasteurized for the required length of time. On the other hand, leakage escaping past outlet valves before the milk or milk product in the holder has been held for the full holding period, will contaminate the pasteurized supply.

The reason for the second requirement is that pipe sections, even though but two or three inches long, between the body of the holder and the outlet valve will contain milk or a milk product which may be, for part or all of the holding period, more than 1° F. below the temperature of the hottest milk. The board of health therefore requires all pasteurization holders to be equipped with close-coupled valves.

protector inlet and outlet valves, shall be disconnected from the raw milk supply during the heating, holding and emptying periods, and from the outlet piping during the filling, heating, and holding periods.

Bactericidal treatment of outlet valves.—All outlet valves except leak-protector plug-type valves shall be given bactericidal treatment immediately before the discharge of pasteurized milk. This shall be accomplished by means of a steaming connection in the valve itself, or, in the case of existing, otherwise satisfactory valves, by blowing steam from a steam hose upon the valve or by any other method approved by the board of health. The steaming period shall be at least 30 seconds, unless the surfaces to be treated are exposed directly to the steam, in which case the period of exposure shall be not less than 15 seconds. Automatically operated valves, except leak-protector plug-type valves, shall be steamed automatically.

In the case of tubular holders, the outlet valve shall be steamed after the holder has been completely filled with milk (in the case of 30-minute pasteurization, not before 30 minutes after starting to fill the holder), and shall not be opened until after the steaming operation.

16p(d)—Foam-Heating.

For holders of vat or pocket types, means shall be provided and used which will keep the atmosphere above the milk at a temperature of 150° F. to 155° F. during the heating and holding periods. If steam is admitted into the holder, the steam line shall be provided with a trap properly designed to avoid the discharge of water into the milk and approved by the board of health.**

** This specification is included because a large percentage of the designs of milk-handling equipment in use today result in the formation of a blanket or of islands of foam on the surface of the milk in vat or pocket-type holders, and because the temperature of the air above the milk is frequently far below the temperature of pasteurization, and studies show that the temperature of the foam can be well below 130° F., when the main body of the milk is at 145° F.

Therefore, the mixture of such foam and milk which leaves the holder at the end of the pasteurization process is not safely pasteurized. Disease organisms, if present in the foam before pasteurization, may be present in the foam after pasteurization.

The designs illustrating the types of air-heating equipment required by the board of health with respect to this item may be obtained from said board.

Operating instructions.—In order to heat air prior to filling vat, steam should be admitted to distributor about 5 minutes before milk enters vat. Air temperature in vat should be kept at 150°-155° F., throughout the entire holding period. More steam is usually required during heating period than during holding.

The surface of the milk should be not less than 1 inch below the bottom of the thermometer bulb to avoid erroneous air thermometer readings from milk splash during agitation.

The steam distributor and its openings should be thoroughly cleaned every day.

Air and Foam Temperature Indicating Thermometers

Type.—V-shaped brass or equally non-corrodible scale case with removable glass front, mercury actuated, bottom of bulb chamber not less than 2 inches and not more than 3½ inches below under side of cover, filling above mercury, nitrogen or equally suitable gas.

Magnification of mercury column.—To apparent width of not less than 1/16-inch.

Scale range.—130° F. to 210° F., extension either side permissive, protected against damage at 220° F.

Temperature represented by smallest scale division.—1° F.

Number of degrees per inch of scale.—Not more than 16.

Accuracy.—Within 1° F., plus or minus, throughout specified scale range.

Steam fitting.—I. A. M. D. ferrule.

Bulb.—Corning normal, or equally suitable thermometric glass.

16p(e)—Vat and Pocket Covers.

The covers of vats must be so constructed that nothing on top thereof will drop into the vats in either their open or closed position.*

The covers of all equipment must be kept closed during operation, except in case of emergency.

16p(f)—Pre-heating Holders.

All holders, used for holding milk which has been heated to the pasteurizing temperature before entering the holders,

* Some vat covers are so designed that pools of milk or condensation, etc., which may have accumulated on top of the covers, may drop into the milk. This sometimes occurs through the inlet part of the cover, or by drip over the back edge of the cover into the vat when the cover is raised. Inasmuch as the material thus entering the vat may be contaminated, it is necessary that the cover be so designed as to overcome this objection. This may be done by means of vertical fins, overlapping edges, and setback hinges. It will usually be a simple matter for the plant owner to have a tinner make the necessary corrections in the design of the cover.

shall be pre-heated with steam or otherwise so that the metal shall be at least at the pasteurizing temperature before the holding period begins.

2285 Item 17p.—Cooling.

All milk received for pasteurization, but not pasteurized within one hour after it is received at the plant, shall then be immediately cooled in equipment approved by the board of health to a temperature of 50° F. or less and maintained thereat until pasteurized; and all pasteurized milk and milk products shall be immediately cooled to an average temperature of 50° F. or less, as defined in section 3082 (R), and maintained thereat until delivery to the final purchaser.

Public health reason.—If milk is not cooled within a reasonable time after it is received at the pasteurization plant, its bacterial count will be materially increased.

The same public health reason applies to the cooling of milk and milk products after pasteurization.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All milk intended for pasteurization, but not pasteurized within one hour after it is received at the plant or cooling station, is then immediately cooled to 50° F. or below, and maintained thereat until pasteurized. All milk shall be cooled or pasteurized as soon as possible after receipt.

(2) All pasteurized milk and milk products are cooled immediately after pasteurization to 50° F. or below, and maintained at that average temperature, as defined in section 3082 (R), until delivery to the final purchaser.

(3) All surface coolers meet the following specifications:

(a) The sections of open-surface cooler shall be installed so as to leave a gap of at least ¾-inch between the header sections to permit easy cleaning. On new installations, the header faces above and below such gap shall be so shaped as to direct condensation away from the tubes.

(b) Suitable means shall be provided to prevent leakage of brine or water from the headers dropping into the milk trough, by shortening the bottom trough, by the use of deflectors at the bottom of the headers, or by other approved methods.

(c) The supports of the cooler sections shall be so located as to prevent drip therefrom reaching the milk.

(d) Regenerative heater-coolers shall be so constructed and maintained as to prevent access of the raw milk to the pasteurized milk. The pasteurized milk shall always be under greater pressure than the raw milk.

(e) All open-surface coolers and open-surface regenerative coolers shall be located in a separate well-ventilated room, or shall be provided with tight-fitting shields, preferably suspended on trolleys. Special exceptions may be made by the board of health when clearly warranted. The board of health is clearly warranted in making exceptions only when the room is so constructed and the cooler is so located as to eliminate all danger of contamination by flies, dust, drip, splash, manual contact, and droplet infection from coughing and sneezing. If the milk surface of the pasteurized-milk cooler is exposed, at least part of the service rendered by pasteurization is nullified, since the milk cooler represents the largest single exposure of milk which takes place at any time in its course. The ideal requirement is, obviously, that pasteurized milk shall not be exposed again from the moment pasteurization begins until the pasteurized milk is in the bottle.

The shields shall conform to the following specifications:

(1) The material shall be of smooth metal which is not readily corrodible.

(2) All seams shall be flush.

(3) All parts shall be readily accessible for cleaning.

(4) The shields shall be tight fitting so as to effectively protect all milk surfaces from fly or dust contamination.

Items (d) and (e) are to be required for all existing equipment. All items are to be required for newly installed equipment.

Item 18p.—Bottling.

Bottling of milk and milk products shall be done at the place of pasteurization in automatic machinery approved by the board of health in such manner as to prevent any part of any person or his clothing from coming in contact with any surface with which milk or milk products come in contact.

The term "automatic machinery" is not interpreted to

exclude machinery operated by man-power, but is interpreted to exclude methods in which the bottling and capping devices are not integral in one machine, and in which capping does not immediately follow bottling.

Public health reason.—Hand-bottling is very apt to result in the exposure of the milk and milk products to infection, which would nullify the effect of pasteurization.

2286 Satisfactory compliance.—This item shall be deemed to have been satisfied if the bottling is done by automatic machinery conforming with the following requirements:

(1) The bottler is of a design which does not require frequent adjustment during operation, thus exposing the milk to danger of contamination.

(2) Bottling-machine supply tanks and bowls are provided with covers which are so constructed as to prevent any contamination reaching the inside of the bottler tank or bowl.

(3) All parts can be readily cleaned.

(4) Bottler floats are so designed as to be adjustable without removing the cover.

(5) The filler pipe of the bottler is provided, as close to the top of the bottler as possible, with an apron or other approved device to prevent water of condensation or drip from fingers reaching the inside of the bottler during float adjustments.

Bottler designs which do not include filler pipes or floats shall not be required to comply with items (4) or (5).

(6) Automatically operated bottler infeed conveyors are provided with suitable overhead shields from the bottle washer to the bottler feed star to protect the bottles from contamination.

(7) All surfaces with which milk comes in contact are of smooth, not readily corrodible material, readily accessible for cleaning.

Item 19p.—Overflow Milk.

Overflow milk or milk products shall not be sold for human consumption.

Public health reason.—Milk or milk products which have come in contact with equipment surfaces which have not been treated with a bactericide or safeguarded after treat-

ment have been exposed to infection, and are therefore dangerous.

Satisfactory compliance.—This item shall be deemed to have been satisfied so long as there is no evidence of the use of spilled or overflow milk or milk products for delivery to consumers.

Item 20p.—Capping.

Capping of milk and milk products shall be done by automatic machinery approved by the board of health. Hand capping is prohibited.*

Public health reason.—Hand capping is apt to expose the milk to contamination.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) All bottlers are equipped with an automatic capping mechanism of a design which does not require frequent adjustment, and

(2) Bottles imperfectly capped are dumped into cans or other containers, and the dumped milk or milk products repasteurized.**

Item 21p.—Personnel—Health.

Every person connected with a pasteurization plant whose work brings him in contact with the production, handling, storage, or transportation of milk, milk products, containers, or equipment shall furnish such information, permit such physical examinations, and submit such laboratory specimens as the board of health may require for the purpose of determining freedom from infection.

The board of health, or a physician authorized by it, shall in each such instance take a careful history, and if such history suggests that such person may be a carrier of or infected with the organisms of typhoid or paratyphoid fever, or of any other communicable disease likely to be

* For definition of "automatic machinery," see item 18p.

** Attempts to adjust caps by hand, or to remove them and recap either by hand or by machine, inevitably expose the milk in the bottle to manual contamination. The substitution of a pick for the fingers in removing caps does not prevent manual contamination, inasmuch as the point of the pick, which often touches the milk, is exposed to contamination from the fingers, etc.

The above requirement is especially important because a fundamental rule in the case of pasteurized milk and milk products is that they shall be protected against contamination, particularly manual contact, from the time they are pasteurized until delivery.

transmitted through milk or milk products, he shall secure appropriate specimens of bodily discharges and cause them to be examined by the board of health.

No person shall spit in any part of any room, vehicle, or other place used for the sale, storage, handling, or transportation of milk or milk products.

Public health reason.—Investigations of milk-borne diseases have shown that the most frequent source of infection is the presence of the disease organisms in the discharges of milk handlers. The diseases so transmitted through milk include tyhpoid fever, dysentery, diphtheria, septic sore throat, scarlet fever, and tuberculosis. Spitting may spread disease.

Satisfactory compliance.—In carrying out this item, the following procedure, in addition to the requirement against spitting, shall be required for every employee of pasteurization plants. The examination shall include a history and, where necessary, examinations for typhoid fever, paratyphoid fever, diphtheria, and tuberculosis, blood specimens for typhoid and paratyphoid agglutination tests, nose and throat cultures on Loeffler's blood serum and, in cases showing clinical symptoms of tuberculosis, specimens of sputum. The examination of laboratory specimens shall be considered necessary when the history suggests the occurrence at any time of typhoid or paratyphoid fever,
2287 or recent infection with or exposure to any other disease transmissible through milk supplies.

The following shall be barred from employment in connection with a pasteurization plant:

(a) A person who has not been immunized against typhoid fever within two years, and who shows a positive or a typical Widal, or a person who gives a history of typhoid fever, unless such person is willing to have three sets, or more if required, of specimens of feces and urine collected by the board of health, in a manner prescribed by the board of health, or if any of said specimens prove positive, or

(b) A person who is found to harbor virulent diphtheria organisms, or

(c) A person showing significant clinical or laboratory evidence of active tuberculosis.

Item 22p.—Personnel—Cleanliness.

All persons coming in contact with milk, milk products,

containers, or equipment shall wear clean outer garments and shall keep their hands clean at all times while thus engaged. Smoking in the milk-handling and container-washing rooms of the plant is prohibited.

Public health reason.—The public health reason for this requirement is obvious.

Satisfactory compliance.—This item shall be deemed to have been satisfied if:

(1) The outer garments of all milk handlers, including delivery personnel, are reasonably clean. Inside employes must wear washable outer garments especially provided and used for no other than milk-plant duty; and

(2) The hands of all milk handlers are clean; and

(3) There is no evidence of smoking by anyone in the milk-handling and container-washing rooms of the plant.

Item 23p.—Vehicles.

All vehicles used for the transportation of milk or milk products shall be completely enclosed and so constructed and operated as to protect the milk or milk products from the sun and freezing and from contamination. Such vehicles shall be kept clean, and no substance capable of contaminating milk or milk products shall be transported with milk or milk products in such manner as to permit contamination. All vehicles used for the distribution of milk or milk products shall have the name of the distributor prominently displayed.*

Certified Milk and Milk Products.—Certified milk and milk products are milk and milk products which conform with the rules and regulations of the board of health for certified milk and milk products.

3094. Dipping—Delivery Containers—Delivery at Quarantined Places.) The sale of dipped milk and milk products is hereby expressly prohibited. All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized, and all certified milk and milk products sold for consumption in the raw state shall be placed in their final delivery containers at the farm at which they are produced. Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; provided, however, that nothing herein contained shall be construed to

* See item 26r, Grade A Pasteurized Milk specifications.

prohibit hotels, soda fountains, restaurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the board of health.

The delivery of milk and milk products to, and the collection of milk and milk products containers from, quarantined residences shall be subject to the rules and regulations of the board of health.*

An exception may be made where the distributor delivers milk in bulk, in which case the board of health may use its discretion in permitting the practice of transferring milk from one can to another at the customer's place of business.**

The board of health will not permit this practice except in special cases in which it finds the practice justified, and in which it has assured itself that the transferring will take place under sanitary conditions.

No milk bottle or other containers may be taken out of or away from quarantined premises during the period of quarantine or thereafter, until said bottles or contain-
2288 ers have been sterilized, and permission has been granted by the board of health for the removal of same.†

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* The purpose of this item is to prevent, so far as practicable, exposing the milk to contamination from the time it is placed in its container at the dairy or milk plant until the time it is delivered to the final consumer. The practice, formerly quite prevalent, of transferring milk from a bulk container, located in the delivery vehicle to the household container, either by dipping or by drawing from a faucet, is dangerous because of the opportunity for contamination by dust and flies, or manually.

Another practice on the part of some distributors is the filling of returned bottles along the milk route, particularly at retail depots. This item expressly forbids this practice.

** The exception is intended to cover only deliveries to restaurants, bakeries, and similar establishments, using milk for cooking and manufacturing purposes only. In these cases, it frequently happens that the demand is for a quantity greater or less than the quantity carried in standard cans, thus necessitating the splitting of a full can.

† The use of standard milk bottles for delivering milk and milk products in quantities less than one gallon is required in order to prohibit delivery in such containers as buckets, fruit jars, etc., which may be difficult to wash and to subject to adequate bactericidal treatment, which cannot be filled and capped with the proper equipment used for these purposes, and which it is often difficult to label properly.

The portion of this section which prohibits the serving of milk as milk except in the original containers is designed to prevent contamination of the milk in serving. Such contamination is frequently observed in the dipping of milk from a bulk container into the glass served the customer. The glass frequently overflows and the milk comes in contact with the fingers, and then drips back into the bulk container from which it was dipped. Furthermore, even if milk is poured into glasses from bottles in the kitchen, there is more opportunity for carelessness and consequent contamination than if it is served in the original container, because the transferring is done out of sight of the customer.

3095. Products Shipped from Beyond Limits.) Milk and milk products from points beyond the limits of inspection of the city of Chicago may not be sold in the City of Chicago unless produced and pasteurized under provisions identical with those of this article and approved by the board of health. In order that inspections by the board of health may be adequate, thorough, and effective, the board of health may confine its inspections within such points and territorial limits as the board of health may, from time to time, deem necessary to insure economic and proper supervision, and to safeguard and promote the public health of the city of Chicago.

3096. Notification of Disease.) Notice shall be sent to the board of health immediately by any producer or distributor of milk or milk products upon whose dairy farm or in whose milk plant any case of sickness or any infectious, contagious, or communicable disease occurs.

Whenever a case or suspected case or carrier of

Diphtheria
Dysentery, Amebic
Dysentery, Bacillary and other infective types
Epidemic Meningitis
Paratyphoid Fever
Poliomyelitis, Acute Anterior
Scarlet Fever
Septic Sore Throat
Smallpox
Typhoid Fever
Tuberculosis, "Open Case"
Undulant and Malta Fever

(a) exists in a home of a distributor or of any person who handles, delivers, or produces milk or milk products, the board of health shall be immediately notified, and such person shall immediately be removed from his duties in connection with such handling, delivering or production, and shall not be permitted to resume such duties until granted a release by the board of health, provided that no such person shall live in a home which is quarantined because of the existence or suspected existence of any of the above-named diseases.

(b) occurs on a dairy farm, the board of health shall be immediately notified, and the milk from that farm shall

be immediately excluded from sale within the city of Chicago, until released by the board of health.

Future Dairies and Milk Plants.—All dairies and milk plants from which milk or milk products are supplied to the city of Chicago, which are hereafter constructed, shall conform in their construction to the requirements of the board of health, which shall not be less than the grade A pasteurized milk requirements of this article.

3097. Suspicion of Infection—Procedure.) When suspicion arises as to the probability of transmission of infection from any person concerned directly or indirectly with the handling of milk or milk products, the board of health is authorized to require any or all of the following measures, or any additional measures which it may deem necessary:

(1) The immediate exclusion of that person from milk handling.

(2) The immediate exclusion of the milk supply concerned from distribution and use.

(3) Adequate medical and bacteriological examination of the person, or his associates, and of his and their bodily discharges.

3098. Limit of Time of Sale.) All pasteurized milk, cream, and skimmed milk shall be sold not later than noon of the day beginning twenty-five hours after the day of pasteurization, and shall not be sold at any time after that designated on the label.

All certified milk, cream, and skimmed milk shall be sold not later than the day beginning thirty hours after the time drawn from the cow, and shall not be sold on any day except the day designated on the label.

2289 All pasteurized buttermilk, and cultured buttermilk shall be sold not later than the day beginning forty-two hours after the time of pasteurization, and shall not be sold on any day except the day designated on the label.

All certified buttermilk and certified cultured buttermilk shall be sold not later than the day beginning fifty-four hours after the time drawn from the cow, and shall not be sold on any day except the day designated on the label.

3099. Penalty.) Any person who shall violate any provision of this article shall be fined not less than five dollars nor more than two hundred dollars for each offense. Each

and every day on which the violation of any of the provisions of this article occurs shall constitute a separate and distinct offense.

2290 Legal Notices.

Rules and Regulations Governing the Production, Processing and Distribution of Vitamin D Milk and Vitamin D Ice Cream Unanimously Passed by the Board of Health at Its Meeting of November 20, 1934.

Regulations Governing the Production, Processing and Distribution of Vitamin D Milk.

1. Permit Required.

No person, firm or corporation shall treat milk to be sold in the city of Chicago for the purpose of increasing its vitamin D content, or placing such milk in the final container for sale, without first procuring a permit from the Board of Health.

The term "final container" shall be construed to mean each bottle, can or other container filled with milk, delivered to the individual consumer or to a hospital, restaurant, hotel, club, or other institution.

The term "unit" when used in these regulations shall be the United States Pharmacopeia X, 1934 unit.

2. General Regulations.

Each person, firm or corporation, producing vitamin D milk, or placing it in the final container shall cause samples of said milk to be collected and examined for its vitamin D content in a properly qualified laboratory at least once during each two month period, or at such time as the Board of Health may deem necessary, and such person, firm or corporation shall furnish the Board of Health, in writing, the results of such examination.

If, at any time, it is found that a proper vitamin D potency is not being maintained in the product, or that the safety of the product is not assured, or that fraud has been practiced, the permit may be revoked forthwith, and the holder thereof, prohibited from further sale of the product within the city.

2291 3. Approved Processes of Fortifying Milk with Vitamin D.

The processes hereby recognized for artificial fortification of milk with Vitamin D are:

(a) Irradiation with ultra-violet light.

(b) The addition of an approved vitamin D concentrate in a sanitary manner, and

(c) The feeding of concentrated vitamin D substances to dairy cows, under suitable conditions.

A. The Irradiation Method.

1. Equipment and Requirements of Operation.

(a) The equipment used for irradiating milk shall be of approved sanitary construction, as required of all other milk processing equipment. Plans for the installation of the processing equipment shall be submitted for approval to the Board of Health by the applicant before the machinery is installed.

(b) The rate of flow of the milk through the irradiator, and the average intensity of the ultra-violet rays upon the milk shall be such as to insure a vitamin D potency of not less than 135 U.S.P. units per quart of milk.

(c) A recording ammeter chart shall show the electrical input to the ultra-violet lamp for the entire time of operation and, on the same chart, the exact running time of the flow of milk to the irradiator.

The recording ammeter charts shall at all times be open to inspection by the Board of Health.

(d) The input milk pump of the irradiator shall be automatically controlled, to operate only when the irradiating lamp is in operation.

(e) Suitable suction fans and ducts shall be provided for removing undesirable gases and fumes from the proximity of the irradiator lamp.

2292 2. Labeling.

Each bottle or other container of the milk treated as set forth in this section shall be labeled with the words "Irradiated Vitamin D," in addition to the lettering required by ordinance, and a seal acceptable to the Board of Health, the name of the patent holder, and the patent num-

ber, may appear on such bottle cap or container in such manner as may be acceptable to the Board of Health.

B. Addition of Substances Containing Vitamin D in Concentrated Form.

1. Any substance containing vitamin D which is proposed to be added to milk shall first be approved by the Board of Health.

The substance containing vitamin D shall be added to the milk only in a manner approved by the Board of Health, in such a way as to preclude contamination, and, in such amount as to yield not less than 400 U. S. P. units per quart in the final product.

2. An accurate record shall be kept of the original invoices of all purchases of the vitamin D concentrate used, of the amount introduced daily, and of the daily sales of the vitamin D milk. These reports shall be open to inspection at all times by the Board of Health.

A daily record of the actual amount of vitamin D concentrate added to milk shall be kept and the signature of the person in charge shall appear thereon.

3. Each bottle or other container of milk, treated as set forth in this section shall be labeled with the words, "Vitamin D Concentrate Added," stating the source, in addition to the lettering required by ordinance, and a seal acceptable to the Board of Health, the name of the patent holder, and the patent number, may appear on such bottle cap or container in a manner acceptable to the Board of Health.

2293 C. Production of Vitamin D Milk, by Feeding Substances Rich in Vitamin D to Dairy Animals.

1. The substance used for feeding dairy cattle shall be acceptable to the Board of Health.

2. Each cow shall be plainly and permanently marked with a number or other distinguishing mark, and an accurate list shall be kept of the following items:

(a) the date of freshing

(b) The date of starting the vitamin D feeding.

(c) The kind and amount of vitamin D substance fed daily and the milk production.

The signature of the person immediately in charge of the feeding shall be placed on the daily record.

A true and accurate record shall be kept of the original invoices of vitamin D substances purchased, and of all sales of milk produced by such cows. The final product shall contain not less than 430 U. S. P. units per quart.

All records kept shall be open for examination at all times by the Board of Health.

3. Milk from cows which have been fed the vitamin D substances for less than twenty days shall not be sold as vitamin D milk.

4. Each bottle or other container of milk, treated as set forth in this section, shall be labeled with the words, "Vitamin D Fed," in addition to the lettering required by ordinance, and a seal acceptable to the Board of Health, the name of the patent holder, and the patent number, may appear on such bottle cap or container, in a manner acceptable to the Board of Health.

2294 Resolution.

The following Resolution was adopted and made a part of the rules and regulations of the Board of Health at its meeting held on July 9, 1935:

Whereas, the enforcement of a new milk ordinance entails the use of the complete force of dairy inspectors, and

Whereas, it is necessary to have each plant in the city of Chicago visited daily to insure a safe milk supply, and

Whereas, it is necessary to give the same degree of inspection to all dairy and pasteurization plants whether located in the city of Chicago or outside the corporate limits, and

Whereas, the number of inspectors available for this work is limited, and

Whereas, the supervision of pasteurization plants many miles from the city of Chicago is exceedingly expensive and inconvenient on account of transportation facilities, etc., to the board of health of the city of Chicago, and

Whereas, it is economically impossible to provide for additional inspectors to properly supervise pasteurization plants any great distance from Chicago, and

Whereas, it is imperative that each pasteurization plant be constantly inspected, and

Whereas, it is impossible to inspect the pasteurization plants outside of the County of Cook with necessary frequency and regularity so that said inspection shall be adequate, thorough and effective, and

Whereas, it has become necessary to use the entire force of inspectors for the inspection of pasteurization plants within the county of Cook; therefore, be it

2295 Resolved: That in the interest of the citizens of the city of Chicago and visitors, in order to insure to all an adequate and reasonable standard of perfection in the pasteurization plants supplying milk and milk products for consumption in the city of Chicago, the inspection of dairy and pasteurization plants shall henceforth be limited and confined to the county of Cook, state of Illinois, and no milk or milk products shall be sold or offered for sale as pasteurized milk or milk products in the city of Chicago unless the same shall have been pasteurized in a pasteurization plant which is located within the boundaries of Cook County, state of Illinois.

Herman N. Bundesen, M. D.,
President, Board of Health.
Louis E. Schmidt, M. D.,
Secretary, Board of Health.

Date of publication:
July 12, 1935.

2296. Resolution.

The following Resolution was adopted as part of the rules and regulations of the Board of Health at its meeting on November 12, 1935:

Whereas, the present increases in the number of cases of scarlet fever in the city of Chicago is increasing the possibility of milk-borne infections, and

Whereas, it now becomes urgent and necessary for milk and milk products used in the city of Chicago to be dispensed only in unopened original containers, as received from the distributor, therefore

Be it resolved, that all milk and milk products shall be sold, served or dispensed to the final consumer only in unopened original containers as received from the distributor; and no fractional portion or part of any original

package or container shall be served or dispensed for consumption, except for manufacturing purposes.

Herman N. Bundesen, M. D.,
President, Board of Health.
Louis E. Schmidt, M. D.,
Secretary, Board of Health.

2297 Legal Notice.

The following resolution was adopted by the Board of Health, City of Chicago, at its meeting of June 1, 1937:

Whereas, the proper pasteurization of milk is one of the most important factors in the protection against contagious diseases; and

Whereas, certain methods of pasteurization have been heretofore adopted by the board of health as the only accepted and recognized methods of the pasteurization of milk and milk products, which consist of the heating and holding of milk or milk products to a designated temperature for a designated period of time; and

Whereas, it has come to the attention of the board of health that efficient pasteurization of milk or milk products may be secured by increasing the temperature of the milk or milk products now required and at the same time decreasing the length of time at which the milk or milk products are required to be held at that temperature; and

Whereas, exhaustive tests have been made of this process of high-temperature, short-time pasteurization by the New York State Health Department, the Pennsylvania State Health Department, the New York City Health Department and the U. S. Public Health Service, which tests demonstrated that the heating of milk or milk products to 160° F. and holding it to that temperature for fifteen seconds is of equal efficiency to the present requirements; and

Whereas, the process of high-temperature, short-time pasteurization has been tested for a sufficient length of time so that suitable regulations for the control of its efficiency have been promulgated by the U. S. Public Health Service; therefore

Be It Resolved that the terms "pasteurization," "pasteurized," and similar terms as set forth in the ordinances of the City of Chicago, shall also include the process
2298 of heating every particle of milk or milk products to 160° F. and holding at that temperature or above for

not less than fifteen seconds in apparatus of approved design and properly operated in accordance with the requirements for such method of pasteurization as set forth in the U. S. Public Health Service Milk Ordinance and Code of 1936, the ordinances of the City of Chicago and the rules and regulations of the Board of Health.

Herman N. Bundesen, M. D.
President, Board of Health.
Louis E. Schmidt, M. D.,
Secretary, Board of Health.

Date of publication:
June 4, 1937.

2299 Legal Notice.

The following suggested changes in the rules and regulations of the Board of Health relative to the inspection of dairy farms were passed by the Board of Health at its meeting of November 12, 1937:

The standards and requirements for milk and milk products are hereby amended by striking out under Section 3093 of the Revised Chicago Code of 1931, as amended, all of items 2r, 3r, and 4r(a) and substituting therefor the following:

Item 2r—Dairy Barn, Lighting.

A dairy or milking barn shall be required and in such sections thereof where cows are milked windows shall be provided and kept clean and so arranged as to insure adequate light properly distributed, and when necessary shall be provided with adequate supplementary artificial light.

Public-health reason.—Adequate light makes it more likely that the barn will be clean, and that the cows will be milked in a cleanly manner.

Satisfactory compliance.—The milking portion of the barn must be provided with windows or other openings sufficient in area and so arranged as to insure adequate light properly distributed. If glazed windows are used they shall be kept clean. Such sections of the dairy or milking barn where cows are milked should have three square feet of light area for each cow in the barn at any one time. For new construction, four square feet of window space per stanchion is recommended.

Adequate artificial lighting must be provided for night milking. The requirement of adequate artificial light will be satisfied if the milking portion of the barn is so lighted that cleaning and milking operations can be efficiently performed.

2300 Item 3r—Dairy Barn, Air Space and Ventilation.

Such sections of all dairy barns where cows are kept or milked shall be well ventilated and shall be so arranged as to avoid overcrowding.

Public-health reason.—This item is required in order to avoid overcrowding and to insure proper ventilation.

Satisfactory compliance.—This item shall be deemed to have been satisfied when, upon inspection, conditions are such as to result in sufficient fresh air at all times and no overcrowding.

Such sections of all dairy barns where cows are kept or milked should have 400 cubic feet of air space per cow in the barn at any one time.

Stanchions shall be required for the maximum number of cows in the milking barn at any one time, and should preferably be not less than 36 inches wide or such greater width as may be required for the size of the cow in the stanchion. For new construction, it is recommended that the stanchions be preferably 42 inches apart and equipped with metal or other suitable dividers or partitions.

Windows opened for ventilation purposes should preferably be tilted back from the bottom, permitting the top to be open, the sides being boxed, in order to prevent a direct draft on the cows.

Item 4r—Dairy Barns, Floors.

2301 The floors and gutters of such parts of all dairy barns in which cows are milked shall be constructed of concrete or other approved impervious and easily cleaned material, shall be graded to drain properly, and shall be kept clean and in good repair. No horses, pigs, fowl, calves, etc., shall be permitted in parts of the barn used for milking.

4r(a)—Floor Construction.

Public-health reason.—Floors constructed of concrete or other impervious materials can be kept clean more easily than floors constructed of wood, earth or similar materials, and are therefore more apt to be kept clean.

Satisfactory compliance.*—The floors should preferably be of concrete, but may be of other similar impervious material approved by the Board of Health. Cork bricks or creosoted wood blocks, so long as these are impervious to water and permit no pooling of liquids of wash-water, are approved. Manure gutters shall be of concrete.

Earth floors are not approved because they are not deemed impervious.

Only such portions of milking-barn floors to which cows have access shall be required to be surfaced with impervious material. Feed alleys are included in this exemption provided that they are floored with tight wood or its equivalent and protected from washings or drainage from other parts of the barn floor.

2302 Other portions of the barn shall be separated from the milking portion by railings or partitions. If such other portions of the barn are not kept clean and free of dust and objectionable odors, tight partitions are required; in fact, tight partitions are recommended for all cases. It is recommended, but not required, that feed troughs be of smoothed-surfaced concrete in order to facilitate bactericidal treatment when necessary.**

Concrete floors in barns under construction or reconstruction should have curbs where the floor joins the walls. These are desirable in order to promote cleanliness in the angles of the floors and walls and to avoid rotting of wall sills and studs.

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* (Note—Plans and directions for laying dairy-barn floors may be found in the United States Department of Agriculture Farmers' Bulletin #1342, and in other publications.)

** Note—Although it has become general practice among modern dairymen to build milking-barn floors of concrete, some dairymen still hesitate to take this step because of the fear of possible injury to their cattle. This objection is answered by the experience of the great number of dairymen who milk on concrete floors. The danger of injury is not great enough to counterbalance the many advantages of a well-drained, impervious barn floor. The floor should have an untroweled surface in order to prevent slipping. When necessary to keep the cattle in the milking barn the floors may be bedded in order to prevent discomfort.)

Gutters shall be required of ample capacity to care for the accumulation of manure between milking periods. The size of the gutter shall be such as to promote cleanliness and improve drainage.

A gutter eight inches deep and sixteen inches wide is preferred and should be provided on new construction. The gutter shall be located at such distance from the stanchion that the droppings of the cows will tend to fall into the gutter.

Herman N. Bundesen, M.D.,
President, Board of Health.
Louis E. Schmidt, M.D.,
Secretary, Board of Health.

2303 Legal Notice.

At the meeting of the Board of Health held on April 26, 1938, the following amendment was adopted:

The standards and requirements for milk and milk products are hereby amended by including the following definition and standard in connection with Sections 3082 and 3090 of the Revised Chicago Code of 1931, as amended:

Soft curd milk is milk, the curd tension of which has been altered by a method of process approved by the Board of Health, so that the curd tension approximates that of human milk. Soft curd milk is hereby declared to be a milk product, and shall comply with the ordinances of the City of Chicago and the rules and regulations of the Board of Health governing the production and sale of grade A pasteurized milk and milk products, including the following regulations:

All soft curd milk shall be pasteurized subsequent to the method or process used in altering the curd tension. The curd-altering method or process, and the pasteurization, cooling and the place in the final container shall be done in a milk plant operating under a permit from the Board of Health, and the entire processes completed in the same plant. All soft curd milk shall bear a label, stating the method or process used in altering the curd tension.

The rules and regulations adopted by the Board of Health governing the production, processing and distribution of vitamin "D" milk are hereby amended to include soft curd milk, milk beverage or skimmed-milk beverage, and all other milk products, in addition to milk, as defined

in the ordinances of the city of Chicago and the rules and regulations of the Board of Health.

Herman N. Bundesen, M.D.
President, Board of Health.
Louis E. Schmidt, M.D.
Secretary, Board of Health.

Published April 29, 1938.

2304 The following is said ordinance as passed:

Be it Ordained by the City Council of the City of Chicago:

Section 1. That Section 3087 of the Revised Chicago Code as amended, be and the same is hereby stricken, and the following inserted in lieu thereof:

3087. License Fees.) Every person selling or disposing of milk or milk products shall annually pay a license fee as hereinafter provided.

Every person selling, offering for sale, exposing for sale, exchange or delivery, or disposing of milk or milk products in and from any milk plant or milk receiving station approved by the Chicago Board of Health, shall pay an annual plant license fee graded according to the size of such establishment, on the basis of five dollars ($5.00) for each wagon or motor vehicle receiving bottled or bulk milk from said plant for distribution in Chicago.

Such person shall also pay an additional annual milk vehicle license fee for each vehicle used for the delivery or sale of milk or milk products, owned by, or controlled and operated under contract with, and displaying the name of said person, as follows:

On horse wagon or not to exceed one-ton truck or motor vehicle	$ 10.00
Two horse wagon or truck in excess of capacity of one ton and less than two tons	15.00
Truck of capacity of two tons and less than three tons	25.00
Truck of capacity of three tons and less than four tons	50.00
Truck of capacity of four tons and less than five tons	75.00
Truck of capacity of five tons and over	100.00

2305 Provided, however, that any distributor of milk operating independently of any licensed depot, shall pay an annual milk vehicle license fee, based on the above schedule together with a five dollar ($5.00) milk vendor

inspection fee for each vehicle operated in the city of Chicago.

Every person selling, offering for sale, exposing for sale, exchange or delivery, or disposing of milk or milk products, which is not intended to be consumed on the premises, in and from any milk plant, such as a milk depot, store, stand, booth, market place or any building or enclosure or establishment of a similar character, shall pay an annual license fee of five dollars ($5.00).

Section 2. This ordinance shall take effect and be in force from and after its passage and due publication.

Passed—June 10, 1938.

2306 And afterwards, to wit, on the 12th day of May, A. D. 1939, being one of the days of the regular May term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit: Entered May 12, 1939.

2307 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

ORDER.

On motion of Fred A. Gariepy and Victor P. Frank, attorneys for the plaintiff in the above entitled cause, after due notice to counsel for the defendants; and the court being fully advised in the premises and having jurisdiction of the parties and subject matter, and for good cause shown; this cause is referred to Master in Chancery Jacob Grossman to take the evidence and to report the same together with his conclusions of fact therein and his conclusions of law, to this court.

Enter:

Charles E. Woodward,
Judge.

Dated: May 12, 1939.

2432 And on, to wit, the 25th day of May, A. D. 1939 there was filed in the Clerk's office of said Court a certain Notice, in words and figures following, to wit:

Filed May 25, 1939. 2433 IN THE DISTRICT COURT OF THE UNITED STATES.
• • (Caption—316) • •

NOTICE.

To: Fred A. Gariepy, 1 N. La Salle Street, Chicago.
Victor P. Frank, 135 N. Clark Street, Chicago.

Please Take Notice that on Thursday, the 25th day of May, A. D. 1939, at the opening of court, or as soon thereafter as counsel can be heard, we shall appear before the Honorable Charles E. Woodward, United States District Court Judge, in the room usually occupied by him as a court room in the Federal Court, or in his absence before such judge of the United States District Court as shall be hearing motions in his stead, and shall request the entry of an order approving the stipulation heretofore entered into by the parties hereto, by their respective attorneys:

Barnet Hodes,
Corporation Counsel,
Walter V. Schaefer,
Assistant Corporation Counsel,
Charles P. Horan,
Assistant Corporation Counsel,
Attorneys for City of Chicago, et al., Defendants.

Received a copy of the above and foregoing Notice this 24th day of May, A. D. 1939.

Fred A. Gariepy,
Victor P. Frank (WNE)
Attorneys for Plaintiff.

2434 And afterwards, to wit, on the 25th day of May, A. D. 1939, being one of the days of the regular May term of said Court, in the record of proceedings thereof, in said entitled cause, before Honorable Philip L. Sullivan, District Judge appears, the following entry, to wit:

2435 IN THE DISTRICT COURT OF THE UNITED STATES. Entered May 25, 1939.
* * (Caption—316) * *

ORDER.

This cause coming on to be heard upon the motion of the defendants for the entry of an order approving the stipulation attached hereto and marked Exhibit 1,

And the court having considered the motion and the stipulation and being fully advised in the premises,

It Is Ordered that said stipulation be and it is hereby approved.

Enter:

Philip L. Sullivan,
Judge.

Dated at Chicago this 25 day of May, A. D. 1939.

2346 EXHIBIT 1.

IN THE DISTRICT COURT OF THE UNITED STATES.
* * (Caption—316) * *

STIPULATION.

In order to expedite the determination of the issues in this case and to conserve the time of the court, the parties to this cause, by their respective attorneys, hereby stipulate:

1. Experiments to be conducted in accordance with technical procedures outlined by the Board of Health of the City of Chicago may be performed under operating conditions at the plant of the plaintiff, Fieldcrest Dairies, (Inc.), to determine: (a) whether the "Pure-Pak" milk container described in the complaint in this case is absorbent or non-absorbent, and (b) whether the immersion of said containers in melted paraffin for periods of time and at temperatures actually employed in commercial production has a bactericidal action; and if so, the extent of the bactericidal action of such immersion.

2. These experiments shall be performed independently by each of the following:

Dr. M. J. Prucha, Professor of Dairy Husbandry, University of Illinois.

2437 Dr. Alex Ray, Professor of Bacteriology, Northwestern University.

Dr. John H. Bailey, School of Medicine, Loyola University.

Reports containing only the statement of the technical procedures employed in these experiments and a detailed statement of the factual results thereof shall be made in writing to the Honorable Jacob I. Grossman, Master in Chancery of the United States District Court, for the Northern District of Illinois, Eastern Division as promptly as practicable after the completion of the experiments. Observers designated by the plaintiff and the defendants may be present at all times during the conduct of said experiments.

3. The conduct of said experiments by any of the persons named shall not disqualify him from testifying as to matters of fact or opinion concerning any of the issues in this case.

4. The right of any party to introduce evidence pertaining to any of the issues in this case and to introduce factual and opinion evidence as to the validity, conclusiveness or merit of any of the experiments conducted pursuant to this stipulation, is neither restricted nor in any way affected by this stipulation.

Barnet Hodes,
Corporation Counsel,
Walter V. Schaefer,
Assistant Corporation Counsel,
Charles P. Horan,
Assistant Corporation Counsel,
Attorneys for Defendants.
V. P. Frank,
F. A. Gariepy,
Attorneys for Plaintiff.

2438 And on, to wit, the 29th day of June, A. D. 1939 there was filed in the Clerk's office of said Court a certain Stipulation, in words and figures following, to wit:

2439 IN THE DISTRICT COURT OF THE UNITED STATES. Filed June 29, 1939.

• • (Caption—316) • •

STIPULATION REGARDING TESTS REQUESTED BY THE CITY OF CHICAGO PURSUANT TO STIPULATION HERETOFORE APPROVED BY THE COURT.

Without either party admitting the materiality of the following stipulation, it is agreed that if the tests requested by the City of Chicago, the procedures for which as revised June 6, 1939, are attached hereto and made a part hereof, were conducted the results would be as follows:

1. If experiment No. 1 is conducted as outlined the dye will appear in the milk.

2. If experiment No. 2 is conducted as outlined some patches of the inside surface of the container will be colored. Usually the dye colored area is along the scored or bent corners, and here and there there may be a little patch on the bottom and along the seam where the bottle is glued with adhesive. Every container which was examined was stained to some extent. The surface of the sides of the container are relatively free from the dye toward the center but there might be patches in the center in one out of ten bottles.

3. If experiment No. 3 is conducted as outlined some of the bacteria will be found under the paraffin still viable. The test organisms E. Coli and B. Prodigiosus will still be viable after parafining.

2440 4. If experiment No. 4 is conducted as outlined it will be found that the melted paraffin is free of bacteria.

5. If experiment No. 5 is carried out as outlined, with quart containers, bacteria on the external surface of the filled quart container over and adjacent to the opening will not be transferred into milk during the process of normal pouring from the container.

6. If experiment No. 6 is conducted as outlined it will show that paraffining will not kill all of the bacteria in the paper. Whether paraffining will reduce or increase the number of bacteria in the paper and the extent of the reduction or increase, if any, is not possible to ascertain from this test. If experiment No. 6 is conducted, the paper

board not being artificially innoculated, the results will show that the number of bacteria in the paper board both before and after paraffining is so small that no conclusions can be drawn as to whether paraffining increases or reduces the number of bacteria.

Fieldcrest Dairies, Inc.,
Plaintiff,
By V. P. Frank & Fred A. Gariepy,
Its Attorneys.

City of Chicago, *et al,*
Defendants,
By Barnet Hodes,
Walter V. Schaefer,
Charles P. Horan,
Their Attorneys.

2441 Revised experiments as of June 6, 1939 by Doctors Lloyd Arnold and Fred Tanner to be conducted by three experts agreed upon by Plaintiff and Defendant in Fieldcrest vs. City of Chicago Board of Health relative to the pending paper containers for milk litigation.

2442 I.

Problem: Will fresh fluid milk absorb substances contained in the card-board wall of the finished container?

Outline of technical procedures: Impregnate blank with a dye, form, paraffin and filled with milk under usual commercial conditions.

Detailed technical process:

(1) Dip paper blank in 1% Saffranin aqueous solution, allow to dry, then form and wax in usual manner. At the same time form and wax on untreated blank alternately with dyed blank. Fill with fresh fluid Grade A milk or cream.

(2) Open and examine milk by pouring into glass beaker after 6, 12, 24 and 36 hours storage. Milk will be colored red if dye is absorbed from the paraffined cardboard wall.

(3) Fill quart and pint containers with milk, fill half-pint containers with cream.

(4) Fill 12 of each size, three to be opened and examined at the indicated time intervals after filling by each referee.

2443 II.

Problem:—Will fresh fluid milk be absorbed into card-board wall of finished container?

Outline of technical procedures:—Each referee to purchase twelve quarts, twelve pints of milk and twelve one-half pints of cream for six days. Store in refrigerator for twenty-four hours. Empty containers, rinse with water until rinse water is free of visible milk. Fill each container with a dye, such as one per cent methylene blue, allow to stand for thirty minutes. Empty and rinse until rinse water is colorless. Open the container by cutting through the card-board and inspect inner surface for dye impregnation of the wall of the container.

2444 III.

Problem:—If the paper is contaminated with bacteria during handling and converting, will the bacteria remain viable after the usual paraffining treatment?

Outline of technical procedures:—Artificially contaminate the surface of blanks with known culture of bacteria; then form and paraffin in the usual manner. Do not fill with milk. Examine the finished empty container bacteriologically for the presence of viable bacteria placed on the surface before waxing.

Detail of technical procedure:

1) Contaminate the blank by smearing bacteria over inner surface, using a dry, sterile swab which has been contaminated with bacteria from an agar surface growth.

2) The following bacteria should be used:

a) B. Coli (Frank.)

b) B. prodigiosus.

c) Micrococcus (Hucker).

3) The finished empty containers should be examined bacteriologically as follows:

a) Three samples—one inch square—to be frequently bent at right angles to break paraffin coating and each dropped into suitable liquid culture media. Sub-cultures to be made after 3, 6, 9, 24 and 36 hours on suitable media to determine the presence or absence of the contaminating bacteria.

2445 4) The same technic should be carried out on con-

taminated blanks without paraffin treatment to prove the presence of the bacteria.

5) Quart, pint and half-pint sized containers should be used. Twelve samples of each should be tested by each referee.

2446 IV.

Problem:—The bacteria in the melted paraffin used for treating the containers.

Outline of technical procedures:—Remove 10 cc. of melted paraffin with sterile pipette. Add drop by drop to 50 cc. of sterile broth in flask. Repeat each 30 minutes from the beginning to the end of the run. This should be done for five separate days. Identification of bacteria if growth appears in broth cultures.

2447 V.

Problem:—Will bacteria on the external surface of the filled container over and adjacent to the opening be transferred to the milk poured from the container?

Outline of technical procedure:—Paint or smear over flap or closed pouring opening and one inch around this area a broth culture of some bacteria not present in milk, such as B. prodigiosus, let dry for fifteen minutes, open and pour out 200 cc. of milk into sterile beaker. Pipette ten samples of 10 cc. each from this beaker into sterile test tubes and incubate forty-eight hours. Observe after twelve, twenty-four and thirty-six hours of pigmentation.

One-half, 1 pint and quart sized containers to be used. Twenty-four tests should be conducted by each referee on each size of these three sized containers.

2448 VI.

Problem:—Determine the bacterial content of unparaffined and paraffined finished container.

Outline of Technical Procedure:—Disintegrate printed blank and finished container from same paper source and determine number of bacteria per gram of paper weight.

Quarts, pints and half-pints should be used. Twelve samples of each size, both blanks and paraffined containers, should be examined by each referee.

2449 And afterwards, to wit, on the 29th day of June, A. D. 1939, being one of the days of the regular June term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit: Entered June 29, 1939.

2450 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

ORDER APPROVING STIPULATION WITH RESPECT TO TESTS REQUESTED BY THE CITY OF CHICAGO.

The parties this day having filed herein a stipulation regarding tests requested by the City of Chicago pursuant to stipulation heretofore approved by the Court, to which stipulation is attached the revised procedures suggested by the defendants as revised June 6, 1939, and the Court having examined said stipulation, approves the same.

It is Ordered, that by entering into the said stipulation and by the Court's approving said stipulation, none of the parties hereto waives any objection which he or it may have to the materiality and relevancy of any of the facts contained in said stipulation, and it is further Ordered,

2451 that none of the parties hereto shall be precluded by said stipulation from offering further evidence on the subject referred to therein.

Charles E. Woodward,
United States District Judge.

Approved:

Barnet Hodes,
Walter V. Schaefer,
Charles O. Horan,
Attorneys for Defendant.

V. P. Frank & Fred A. Gariepy,
Attorneys for Plaintiff.

Jacob I. Grossman,
Master in Chancery.

2812 And on, to wit, the 27th day of April, A. D. 1940 there was filed in the Clerk's office of said Court a certain Transcript of Testimony (consisting of three volumes) referred to in the Master's Report, and taken before the said Master, in words and figures following, to wit:

1 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

Proceedings had and evidence taken in the above entitled cause before the Honorable Jacob I. Grossman, Master in Chancery of said Court, in the United States Court House, Chicago, Illinois, beginning at 10 o'clock a. m., Wednesday, May 31, 1939, pursuant to order of reference and due notice had.

Appearances:

Frederick A. Gariepy,
Owen Rall, of counsel,
on behalf of plaintiff;

Barnet Hodes, Corporation Counsel,
City of Chicago, by
Walter V. Schaefer and Charles P. Horan,
Assistants Corporation Counsel,
on behalf of defendants.

2-3 Mr. Schaefer. Before we proceed with the taking of the testimony, there is a matter I would like to call to the Master's attention.

At the outset of the Fieldcrest case, before the case was at issue, I was instructed by the Board of Health to endeavor to have certain tests made, under the sanction of the Court. With that in mind, or as soon as the case was at issue, or very shortly thereafter, I arranged that counsel for the plaintiff and ourselves should appear before Judge Woodward in chambers and explain that situation to him and ask him to arrange a pre-trial conference.

Judge Woodward set that pre-trial conference for an afternoon a few days later. On the morning of the day when that conference was to be held a motion for change of venue was filed, and thereafter there was no further progress in the case until that motion was heard. The hearing on the pre-trial conference was continued indefinitely.

When the motion was disposed of, I took the matter up again with counsel for the plaintiff, and at that time he suggested that in lieu of a pre-trial conference the matter might be expedited if it were handled by stipulation.

4 Accordingly, I prepared a stipulation, which provided for the conduct of experiments, in accordance with technical procedures outlined by the Board of Health, by three men, who were agreed upon by the parties, two of whom were suggested by the plaintiff and one by the defendants.

The stipulation contained reservations to the effect that the conduct of the experiments by any of the persons named would not disqualify those persons from testifying as to matters of fact or opinion concerning any of the issues in the case, and it contained this further reservation or provision:

"The right of any party to introduce evidence pertaining to any of the issues in this case and to introduce factual and opinion evidence as to the validity, conclusiveness or merit of any of the experiments conducted pursuant to this stipulation, is neither restricted nor in any way affected by this stipulation."

The thought there being to reserve to the plaintiff primarily the right to attack the validity of the tests.

5 Thereafter I received a letter from Mr. Gariepy, representing the plaintiffs, which led me to doubt that the experiments would be conducted in accordance with the stipulation. I replied to that letter and asked him precisely what his intentions were. Then the stipulation was approved by the Court and the outline of procedure was submitted to the plaintiff.

After the outline of procedure was submitted, Mr. Gariepy called me with respect to one of the experiments, which contemplated the use of certain bacteria, streptococci bacteria, tubercular bacteria and so on, and said that his people felt that the use of those bacteria might be hazardous if the experiments were conducted in the actual milk plant itself. He suggested that other bacteria, which would have an equivalent thermo death-point, might be substituted. I agreed, and we decided to have a conference of the persons who were to conduct the experiments, to determine upon the bacteria which were to be substituted.

Mr. Gariepy also said that in his opinion the tests would take a long period of time, a matter of months, and I told

him I had been advised the tests could be conducted
6 within a period of one month.

We arranged that a conference be had, which was held Monday. At that conference Dr. Bailey, the man from Loyola University, who was suggested by the defendants, was present. Neither of the persons suggested by the plaintiff to conduct the experiments was present, but in lieu of those men Dr. Tanner of the University of Illinois and Dr. Sanborn, both technicians, were present on behalf of the plaintiff.

Only the first test was discussed. That test was to determine this question: Will fresh fluid milk absorb substances contained in the cardboard wall of the finished container? The test contemplated dyeing the paper or dipping the paper in what is known as a safranin solution, which I am told is a red dye, and then paraffining the paper, running through the container, filling it with milk and then opening the container to determine whether or not the dye was absorbed into the milk.

We got no further than the discussion of that test, because the plaintiffs took the position that the answer to that question was not relevant to the matter at issue in this case,
and they further took the position that that question
7 had been answered to their satisfaction.

Therefore, I asked whether or not that attitude would persist with respect to all of the tests enumerated, being six. They said yes, that would be their attitude with respect to all of the tests. I then suggested there would be no further point in discussing it; it looked as though the stipulation would not be complied with.

That afternoon I called Judge Woodward and I told him that we were having difficulty in connection with a stipulation which had been entered into between the parties. He suggested that I bring the matter to your attention and you dispose of it, or, if you felt that you could not dispose of the matter satisfactorily, we could bring it to his attention again.

Now, that was what I wanted to have decided. We regard those tests and the Board of Health regards them as of considerable importance. The question of relevancy, of course, is saved here by stipulation. The stipulation was deliberately drawn to accomplish that result. Now we are at a stalemate.

Mr. Gariepy: Are you through, counsel?

Mr. Schaefer: Yes.

8 Mr. Gariepy: First, I want to follow up counsel's statement for and on behalf of the defendants, by answering for the plaintiff as follows:

The procedure outlined was not delivered to us until three or four or five days after the stipulation was drawn, we assuming at the time that the procedure would be the proper procedure in accordance with the practice as applied by experts in performing the tests, and the stipulation was signed with that thought in mind.

When we got the procedure I immediately contacted the experts in the case, and the sum and substance of their answer was that we have already performed all of the tests outlined by the City of Chicago for the past year or year and a half and suggested by the Board of Health in their procedure, and we have the answer to these questions all ready, and it is going to take a period of three or four or five or six months to perform these tests over again, unless you want to do them superficially, and it is going to involve expense.

In fact, the plaintiff performed these tests during the last two years and submitted them to the defendants long before this lawsuit was filed, in good faith. The plain-

9 tiff did not see fit to perform these tests again, to satisfy the City of Chicago, as they had already secured the information to be shown by the tests.

No. 2; the next answer is that the whole problem suggested by Test No. 1, as mentioned by Mr. Schaefer a minute ago, is answered by all of the research work combined and not by one test in here. In other words, this Test No. 1 would not be a satisfactory test, nor would it bring out a satisfactory report to the Master or to the experts here involved concerning the issues on this container.

Next, there has been nothing said about this matter of expense. The plaintiff does not see any reason why it should duplicate the expense it has been put to in the last two years, to satisfy the Board of Health on this same matter.

The next is that the tests were suggested to be made at the plaintiff's plant. As I wrote Mr. Schaefer in reply, we would not allow these dangerous bacteria to enter the milk plant. I do not think Dr. Arnold, or the Board of Health, that proposed this procedure ever thought it was

contemplated that we should perform those tests with
10 milk out at the plant and run the danger of having the dangerous bacteria there.

For that reason I wrote Mr. Schaefer back that we had performed these same tests before with a lower thermo death-point in the bacteria,—with the same thermo death-point, but less potent bacteria, and therefore we did not see fit to use this typhoid and these other bacteria suggested in the procedure.

In 1937 and 1938, when these tests were given to the City of Chicago, or the results of these tests, we asked, by repeated letters, Dr. Bundeson and the Board of Health to give us a reply to the substance of what was given to them in the data, and no objection was ever made to what these tests showed or the sufficiency or insufficiency of these tests, until we got into this litigation and it was suggested that the Board of Health now find the procedure under which the tests be made. It was 1937 we submitted this data.

I want to correct a statement in here; that the organisms used by the plaintiff in performing these six tests suggested by the Board of Health were at a higher thermo death-point than those suggested in the tests to be
11 used with the various bacteria outlined. So we did not see where we were going to accomplish anything, except just to repeat considerable expense.

Now, the plaintiff has stood ready at all times to allow the Board of Health and the City of Chicago to make any and all tests that they see fit. If they have not done so in the last two years, that is their own problem. We have been after them for the last two years to give us an answer as to what they want us to prove up as to the suseptibility of the container and its use. Until this lawsuit was drawn and until Mr. Schaefer and I got into a conference on this matter, there was never any offer made by us or any information asked that we did not give to them.

It seems to me it comes with ill grace, after two years of waiting and after we have filed a lawsuit, to satisfy their curiosity concerning certain tests that we have already run and spent substantial money on tests that we have already made, duplicating information just to satisfy them.

If the Board of Health wants samples of the container

or samples of the paraffin, we will give it to them at any
12 time, and they can go up there and perform their tests, and our experts will report according to the same tests.

The Master: Why was this stipulation entered into?

Mr. Gariepy: The stipulation was entered into because, assuming at the time that these tests were dangerous tests, we could not think of performing them with the bacteria suggested, and there has been no suggestion by the Board of Health that we use some other bacteria since that time. There has not been one come-back in that regard.

The Master: I don't quite understand you yet. You have a stipulation which contemplated the conducting of certain tests?

Mr. Gariepy: Right.

The Master: Now, you knew at the time you entered into that stipulation that all of these experiments which you now mention had been conducted at some previous time?

Mr. Gariepy: Yes.

The Master: Then why was the stipulation entered into?

Mr. Gariepy: The stipulation was entered into to, first, narrow the issues in the case, thinking that we would
13 get down to one or two or three or four different issues that the Board of Health wanted satisfied. When the stipulation was entered into we did not have the procedures and tests before us. You see, we were gambling blindly and we relied on getting reasonable tests, other than what we had submitted to them. Having set up the answers already to the Board of Health in 1937 and 1938 and not getting a reply, we assumed we were going to get something from them in the way of tests that he had not covered. Had we known this before we would have told them that we had given them the answer already. We have no quarrel with the fact that three days after the stipulation was entered into along came the procedure, but the procedure was not mentioned before.

The Master: But the stipulation was broad enough to include any and all tests.

Mr. Gariepy: Yes.

The Master: So that what you are virtually doing now is to state that the stipulation was entered into under a misapprehension as to the type of tests to be conducted.

Mr. Gariepy: We did not know the type of tests to
14 be conducted.

The Master: Although you did make a broad and general stipulation.

Mr. Gariepy: Yes.

The Master: Which might conceivably have included any all tests.

Mr. Gariepy: Yes.

Mr. Schaefer: The first paragraph in the stipulation indicates the scope of the experiments to be performed.

The Master: In effect, you are asking to be relieved of this stipulation, should the stipulation be considered broad enough to include tests such as you mentioned.

Mr. Gariepy: Such as we have already made.

The Master: Yes.

Mr. Gariepy: And with this further condition; that the City of Chicago and the Board of Health may go up and perform all of the tests and we will give them all of the cooperation they want, to satisfy them on these tests they are asking for.

The Master: Has the City of Chicago suggested any tests at all, such as you contemplated when you entered into this stipulation?

Mr. Gariepy: Except these tests. The only tests
15 that have been suggested are these outlined, that were received three days after the stipulation was made. No other tests or other remarks or other suggestions have come from the City of Chicago.

The Master: No, I am simply asking the question; in the tests they propose to conduct are there mentioned any tests other than those which you say you have already conducted?

Mr. Gariepy: No.

The Master: They simply want to go over the same ground, in your opinion?

Mr. Gariepy: Yes. We have covered all of those tests.

The Master: If that is true, is there any way of your using, Mr. Schaefer, the reports of the experiments they have submitted already, and checking them?

Mr. Schaefer: We do not agree as to that fact. If we did, of course, we would not ask that these experiments be performed. We are not indulging in futile gestures. The men named have done work for the plaintiff, two of them, Dr. Prucha and Dr. Day. We do not particularly

care who does them, but we want them done under actual operating conditions. From our survey of the literature, we feel that these tests have not been performed, and now we want them performed. The nature of the tests is clearly indicated in the first paragraph of the stipulation.

The Master: The only difference, then, between you is as to whether these tests have been conducted under actual operating conditions, is that correct?

Mr. Schaefer: Partly that, and partly we want these tests observed.

The Master: By your representatives?

Mr. Schaefer: It is in the stipulation that either party may have observers present.

The Master: Two of the observers are the people who have actually conducted these experiments?

Mr. Schaefer: No, I do not mean observers. I mean these persons, as I visualize the effect of the stipulation, are impartial persons who are performing tests for the benefit of the court. We propose that these tests be used in evidence, that the results of the tests be reported to the court. I mean that, in addition to those persons, plaintiff and defendants may have observers present when the tests are conducted.

The Master: Would you regard the stipulation as having effect of an agreement that any evidence in the possession of either party bearing on the subject of experiments is to be excluded, if not conducted in accordance with the stipulation?

Mr. Schaefer: Certainly not. The stipulation makes that perfectly clear in the next to the last paragraph.

The Master: They have the right to introduce the evidence of these experiments that they have conducted?

Mr. Schaefer: Yes.

The Master: And if this stipulation is not carried out, then they would simply introduce their evidence and you would have the right to cross-examine and introduce any other evidence?

Mr. Schaefer: Yes.

The Master: Do you insist now upon the carrying out of this stipulation.

Mr. Schaefer: Yes, sir, I do.

Mr. Gariepy: If the Master please, on behalf of the plaintiff we do not propose to bring in the pathogenic bacteria and dangerous bacteria suggested by the Board of Health.

Mr. Schaefer. That is entirely taken care of and was taken care of by the phone conversation between Mr.
18 Gariepy and me. What these men met for Monday was merely, I thought, to determine upon the other bacteria which was to be substituted.

Mr. Gariepy: Bacteria was never discussed Monday, not a word.

Mr. Schaefer: We never got that far. We didn't get by Test No. 1.

Mr. Gariepy: And by reason of your statements we are not going any further, if we do not satisfy Test No. 1 of the Board of Health. It was at that point the meeting broke up, as you suggested. We never discussed bacteria at all.

The Master: As I understand, Mr. Schaefer, you have agreed to conduct these experiments with bacteria not as virulent as those you originally mentioned?

Mr. Schaefer: That is quite right.

The Master: And you think that the substituted bacteria, if used at the plant, would have no harmful effect whatever?

Mr. Schaefer: I think the technicians in the field can easily describe bacteria, define bacteria and name bacteria that will satisfy everybody. I do not regard that as a serious matter.

19 Mr. Gariepy: The performing of these tests at the plant would be highly out of order; first, because the equipment is not there, the laboratory equipment to perform these tests, and, next, it is highly dangerous.

The Master: Did not you agree to this?

Mr. Gariepy: Not this kind of tests at this plant.

The Master: You agreed to tests at the plant?

Mr. Gariepy: Yes, but not this kind. The tests were not given in the stipulation. If you look at the stipulation you will see the tests were not given. Three days after the stipulation came along, everything was entirely different. If the procedure was outlined in the stipulation, we never would have entered into it.

The Master: What about the expense of conducting these experiments?

Mr. Schaefer: The matter of expense has been agreed upon by Mr. Gariepy and me orally, and the agreement was that the expense should be split down the middle. That is, they have named two people, but we would take the expense of the three of them and they pay half and we pay half.

20 The Master: Do you agree that it would take five or six months to conduct the experiments?

Mr. Schaefer: No.

The Master: How long do you think it would take?

Mr. Schaefer: We say not over a month.

The Master: Would you agree in case the experiments are not completed within a month that the matter be abandoned?

Mr. Schaefer: That depends on when they are undertaken. You mean regardless of when they are undertaken, if they are not completed within a month from the date they begin?

The Master: Approximately a month, rather than five or six months.

Mr. Schaefer: Oh, yes, surely. That is, from the date they begin. If the Master will look at the tests he will see there is no advantage being taken of anybody.

Mr. Gariepy: Furthermore, I am advised by the experts who have been over these tests that it takes eight to ten weeks to bring out the tubercular bacilli. If it takes that long for that to happen, how are we going to finish it in four weeks? We don't want a superficial test and superficial report. We want a real one.

21 The Master: That might go to the weight that would be given to the test.

Mr. Gariepy: Wouldn't that be a sort of a comedy and mockery to go into a four weeks test and hand you something that the experts themselves say is not being done properly. We don't want that.

The Master: The City experts say it can be done in a month.

Mr. Gariepy: They tell me no.

The Master: That is, your experts.

Mr. Gariepy: But they have been over it. They are in a better position to speak with authority than the experts from the City of Chicago, who are guessing.

The Master: Is there anything more to be said about this subject?

Mr. Schaefer: Nothing more here.

Mr. Gariepy: Nothing more.

The Master: I will consider the matter. Let us go ahead with the witness.

Just a minute before we do that, let me ask another question. With reference to these stipulation matters you

are talking about, if it should be held that the stipula-
22 tion should not be carried out and you were permit-
ted to produce all of the evidence which you have in your possession and the city should then ask to conduct the experiments, which would result in taking up considerable time, what would your position be then?

Mr. Gariepy: We think that the city, Master, has had two years to perform all of the tests they wanted concerning this thing, and since we have given them data in 1937 and 1938, their request for delay or their causing delay in the matter here pending is unwarranted.

The Master: But there was no suit pending two years ago.

Mr. Gariepy: But there was data submitted to the city on all of these tests.

The Master: They might not have been contemplating that there was a suit to be brought.

Mr. Gariepy: We are not responsible for that.

The Master: It may not be encumbent on them to go ahead and try a lawsuit just because you took something up with them two years ago. Now, you brought a suit here recently and they may conceivably say that they
were under the impression from the stipulation that
23 certain experiments were to be jointly conducted, and,
at the last moment, according to them, you do not want to go ahead with that stipulation. They might very well say, "All right; we will go ahead with the experiments ourselves and invite you to be present, if you wish. We think that the conduct of those experiments is very essential to a proper disposition of this case, and that since an ordinance of the City of Chicago is involved, it is important that the evidence be very complete." Then they might say, "It is necessary to do this and it will take about a month to carry out the experiments." You say, "It might take more than that." They might take you at your word and say, "We think it is necessary to carry out these experiments, but we are offering you an opportunity at this time to participate and you do not want to take part at this time. So we will go ahead and do them ourselves and invite you to be present, if you desire."

Now, wouldn't that be a pretty strong showing by them?

Mr. Gariepy: Yes, if the city wants to go ahead and perform these tests, as we have said at all times they are

perfectly able to do, let them go ahead; we will give
24 them such data as they request from us, but they will not perform these tests with this bacteria in this plaintiff's plant. We do not propose to have this plaintiff's plant endangered by the City of Chicago and Board of Health in performing those tests out there.

The Master: Is it possible to perform these experiments without dangerous bacteria?

Mr. Gariepy: We say that it is, Master. We have performed them without dangerous bacteria, but those having a higher thermo death-point.

The Master: What if they say they are willing to take substitute or equivalent bacteria, but they want to have the experiments conducted at your plant?

Mr. Gariepy: No. We have not the equipment at the plant to perform them. The plant is a milk plant and not a laboratory. We never expected to have a laboratory at the plant to perform the tests.

The Master: Suppose they wanted to go ahead and conduct the experiments under actual operating conditions and supply the equipment and invite you to be present while the experiments are being conducted and it is necessary to take some time to have those experiments conducted, would you object to the delay?

25 Mr. Gariepy: I would rather not answer that question until the city gives me an outline of what their procedure is and what their wish is and where they are going to take them and how they are going to take them. I am not going to prejudge what the city is going to do or what their intentions are, in view of what happened on these six tests. We are not going to have tests conducted at our plant which would prohibit us from conducting our business out there. If they would just outline the procedure they propose to follow, we will give them a definite answer.

The Master: I have not ruled yet on the question as to whether or not the stipulation is to be followed or complied with. I just asked that question so you might consider answering it along with your other matters.

Mr. Gariepy: I would not attempt to until I see the data from the city, with such modifications as they wish to submit.

The Master: Let us go ahead with the witness now.

26 JOHN RAYMOND SANBORN, was called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please.
A. Joseph Raymond Sanborn.
Q. And your address.
A. Geneva, New York.
Q. What is your business or occupation?
A. Bacteriologist.
Q. Of what school or schools are you a graduate?
A. Massachusetts State College.
Q. What degree did you receive from said college?
A. I received the degrees of Doctor of Science and Doctor of Philosophy.
Q. Have you done any research work since your graduation?
A. Yes.
Q. What research work have you done, and where and when?
A. I have done graduate work at the Massachusetts State College on the subject of cellulose fermentation and the study of cellulose bacteria.
Q. When was that done, Doctor?
A. That was from 1920 to 1924.
27 Q. Have you done any teaching in the matter of bacteriology since that time?
A. I taught bacteriology at McDonald College, McGill University, from 1924 to 1928, and did research work as well as teaching in the organisms associated with cellulose and food and dairy bacteria and medical bacteria.
Q. Doctor, have you had any experience in performing research work for the International Paper Company?
A. Yes.
Q. What experience was that and what type of research work?
A. I went to the International Paper Company as a research bacteriologist in 1929.
Q. For how long?
A. I stayed there in that capacity as research bacteriologist for four years. During that time I was in-

vestigating sanitation, sanitary problems of pulp and paper making, sanitary packaging of foods, sanitation of paper wrappers and containers for foods and the general hygienic condition of paper products and the elimination of bacteria from pulp and paper mills.

Q. Do you know Arthur D. Little, Incorporated, Cambridge, Massachusetts?

A. I was employed as research bacteriologist at
28 Arthur D. Little, Incorporated, consulting engineers, at Cambridge, Massachusetts, for two years, 1934 to 1936.

Q. And in what subject did you perform research work there?

A. The subjects of research were food investigations, food preservation and problems of pulp and paper mill sanitation and in the packaging of perishable foods.

Q. With regard to the packaging of perishable foods, will you name the various types of foods and the various types of packaging that you refer to that you performed research work on that are used in common every-day experience?

A. I have done research work on waxed paper wrappers used in the packaging of meats and other perishable foods. I have investigated the subject of food containers, including containers for milk and cream, buttermilk and other dairy products, ice cream, cottage cheese; trays, paper trays for foods used in delicatessen shops, such as potato salad and similar foods; bottle caps and hoods; fibre cans for ice cream; and paper boxes used in the packaging of dry foods, such as cereals.

Q. What is your present connection or your present position in the way of research work with the State of New York?

29 A. I am in charge of the investigation of the sanitation of paper wrappers and containers, in the employ of Cornell University, with the laboratories at the New York State Experiment Station, Geneva, New York.

Q. And by whom are you paid for your services?

A. I am paid by Cornell University.

Q. And for whom are these services performed at the New York Experiment Station at Geneva, New York?

A. These investigations are performed in the interest of the consumer.

Q. And by the consumer to whom do you refer or mean?

A. I refer to the consuming public.

Q. How long have you been so connected with the New York State Experimental Station at Geneva, New York, doing this research work?

A. Since February, 1937.

Q. And since February, 1937, have you performed various tests and performed certain research work in connection with the single service paper container used for milk?

A. Yes, I have.

Q. How much time have you devoted, since coming to the New York Experimental Station at Geneva, to such work?

30 A. My entire time has been devoted to this investigation.

Q. What do you do with the results of your investigation, in the way of giving out the same to the public?

A. The material, the results of these investigations become public property, through public addresses at scientific meetings, through publications on public health, and scientific journals.

Q. Is there anyone associated with you at the New York Experimental Station at Geneva in performing this work?

A. Dr. Robert S. Breed, who is chief of the division of bacteriology at the New York State Experiment Station and who supervises the investigation. I am in direct charge of the investigation, and I have three assistants.

Q. How many articles and publications have you issued or put forth from the New York Experimental Station, as a result of your work and findings in this research?

A. I would estimate that I have made approximately fifteen addresses since going to the station in my present capacity, and have probably published twenty to twenty-five articles.

Mr. Gariepy: Mr. Reporter, will you mark this pamphlet Plaintiff's Exhibit No. 12 for identification.)

31 (The pamphlet referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 12 for identification.)

Mr. Gariepy: I use that number, Master, by reason of the fact that depositions are being taken and we left off at No. 11, and we want to keep them in sequential order.

The Master: Any objection?

Mr. Schaefer: I haven't seen it yet, Master.

The Master: For what purpose are you marking this?

Mr. Gariepy: To show the work of this man and the extent of his work, concerning the subject matter of inquiry here.

The Master: Why encumber the record with a number of articles which he has written? He states he has written them. Why put all of the articles in?

Mr. Gariepy: Because several of the items contained in this exhibit and in these articles will be covered in cross-examination, in a way, and they ought to be before the Master. They are pertinent as to a number of conditions, the type of the containers, the extent of the containers and the tests the witness has made.

The Master: Do you stand ready to adopt the text in that article as pertaining to his testimony?

Mr. Gariepy: I do.

32 The Master: That is different. If you are merely introducing that as illustrative of the work he has done, that is one ground. If you are trying to introduce it in lieu of testimony by the witness, that is another ground. But you have marked it. You have not offered it yet. Go ahead.

Mr. Gariepy: Q. Doctor, I show you Plaintiff's Exhibit No. 12 for identification, and ask you if you ever saw it before.

A. Yes, sir, I have.

Q. What is it?

A. That is a paper giving the results of an investigation conducted by myself and reported last fall at the annual meeting of the International Association of Milk Dealers, in Cleveland, Ohio.

Q. Have you ever received any request from the Board of Health of the City of Chicago, Dr. Bundesen as acting president, previous to the institution of this suit, or Dr. Black, for any information concerning your findings in research work in the field of single service containers?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Have you ever had any communications, Doctor, from the City of Chicago, the Board of

33 Health, in regard to research work on the containers?

Mr. Schaefer: I object.

The Master: Sustained.

Mr. Gariepy: Q. Doctor, the substance of Exhibit No. 12, that you have just testified to, is taken from your own ex-

perience and your own examination and research work, is it?

A. Yes.

Mr. Gariepy: I offer in evidence Exhibit No. 12.

Mr. Schaefer: I object to the admission of this exhibit in evidence; first, because it will encumber the record, but the primary reason for my objection is this: As Mr. Gariepy says, he is introducing this exhibit to show the use of paper containers throughout the United States of America. I had not noticed when I first glanced at it, but there is a map here that purports to show the cities in which the paper milk bottle was in use throughout the United States.

There are on page 2 two figures showing types of paper milk containers. That is the question which is now pending before Judge Sullivan, raised on the pleadings. It has not been decided in the Ex-Cell-O case, in which a deposition is being taken this morning, or in the American Can Company case.

Our position as to the issues in this case is this:
34 First, does the ordinance of the City of Chicago, properly construed, prohibit the use of paper containers for the distribution of milk in milk bottles, and, second, if that ordinance is properly construed as a prohibition, is the prohibition reasonably related to the public health and general welfare and so on, that is, is it a reasonable exercise of the police powers?

On that question we submit that evidence as to the use or non-use by any other municipality is completely immaterial.

Let me give an example that may make our position clear. Assume that the City of New York permits sound trucks to operate through its business district and assume that the City of Chicago has adopted an ordinance which prohibits the use of sound trucks in highly congested areas. On a trial involving the validity or the reasonableness of the Chicago prohibition, I think no one would contend that the New York permission is material.

The question here is whether this container is a proper container for the distribution of milk. Whether officials of other municipalities so regard it is not material at all.

What we are interested in is this container, what it
35 does or does not do when milk is placed in it. What another municipality, a legislative body or an ad-

ministrative official may think of this paper container is entirely immaterial here.

It seems to me that you could not attack the Workmen's Compensation law of Illinois, for example, on the ground that in Ohio they did not have such legislation.

The Master: Is that the only ground on which you object to this exhibit, the relevancy, for the reason mentioned?

Mr. Schaefer: I hate to take the time to read it now, and yet I do not have in mind word for word what it contains.

The Master: Do you prefer to have the witness give his testimony on the stand, other than by means of a written document?

Mr. Schaefer: I would much prefer that.

The Master: I will sustain the objection on the latter ground. I am not ruling on the matter of relevancy at this time. I would rather be inclined, if that were the only ground, to permit the evidence to be taken and argue later the question of the relevancy, unless evidence of the same sort would be taken in such volume that it would be
36 necessary to decide the point during the course of the hearing.

Mr. Gariepy: I take it the Master sustains the objection to the offer of Exhibit No. 12, because of the fact that the material contained in Exhibit No. 12 can be given by the witness, rather than by this document, Exhibit 12?

The Master: Yes.

Mr. Gariepy: Counsel just said a minute ago that we did not want to encumber the record. That means encumbering the record.

The Master: Let us not argue that point.

Mr. Gariepy: All right. I just wanted to point that out.

The Master: He did mention that in that exhibit there was some fact stated that may well be said to be based on hearsay. I just asked him if that was the only ground. For instance, he stated there in what cities containers are being used. Unless this witness had his own knowledge on the subject, it might very well be that he secured that by correspondence or from others. Then there might be a question as to whether the containers are the same, and so on. That is one thing that occurred to me while he was reading it, and I guess he had that in mind when he stated
37 his objection, but he did not use the word "hearsay." He did mention that when he first opened up the discussion.

Mr. Gariepy: Q. Dr. Sanborn, will you tell, from your own knowledge, the cities and villages where the single service paper milk containers are being used, in the United States?

Mr. Schaefer: I object to that.

Mr. Gariepy: What is the ground of the objection?

Mr. Schaefer: The enumeration of those cities is immaterial.

The Master: For the reason stated?

Mr. Schaefer: Yes. Now, I want to point out or elaborate what I just said a moment ago, with this thought: If evidence of use in other municipalities is admissible, so is evidence of non-use.

Mr. Gariepy: We have no objection to your putting in all the evidence you want of non-uses.

Mr. Schaefer: We cannot determine the issues here presented, the reasonableness of this ordinance, by a count of municipalities in which paper containers are used or not used. What we have to do here is to analyze this container. That is what we are interested in doing. If the prohibition is not related—

38 The Master: I get your point on that. At the present time I would overrule the objection, without prejudice to your renewing it and making a motion to strike. Furthermore, if the evidence on that subject becomes too voluminous and it is necessary to decide the point while we are going ahead with the testimony, we may stop and hear arguments on that subject.

Mr. Schaefer: In order to save time, then, may it be understood that the objection need not be renewed to each question directed to that point?

The Master: You may make a motion to strike at any time you wish, without prejudice.

Mr. Gariepy: Q. Doctor, the last question was for you to enumerate the cities and villages in the United States that you knew of that were using the single service paper container in the sale of milk.

A. New York City is using the paper container for milk and cream, and a great many cities and towns in the so-called metropolitan area of New York City.

Q. How many of those do you know of?

A. I know of about forty. I have not visited each one of those towns, but I have received containers from a great many of them and my intimate knowledge of containers

from each one of those might number possibly ten, from
39 having actually seen the operation or seen the containers.

Q. Name the cities and villages in the United States that you actually know of that are using the single service container?

A. Boston and numerous suburban cities and towns around Boston, such as Quincy, Cambridge, Somerville. Baltimore, Philadelphia, Washington, D. C., Detroit, Flint, Michigan, Duluth, Minnesota.

The Master: May I ask what you mean by a single service container?

Mr. Gariepy: A single service container is a container that is used only for one service, and afterwards destroyed.

Q. Doctor, let me interrupt you while the Master made that inquiry.

Mr. Reporter, will you mark that Exhibit 13, please?

Mr. Rall: That is already marked.

Mr. Gariepy: All right.

Q. Plaintiff's Exhibit 3, which is already marked as of the date of April 27, 1939, what do you call that exhibit in your hand, Doctor, with regard to the subject matter of the inquiry as to single service containers, in use?

A. This is a collapsed blank of a single service
40 container for milk.

Q. That is before the filling?

A. This is before the filling, yes.

Q. Will you look at Plaintiff's Exhibit 2 of April 25, 1939, and tell the Master what that is?

A. This is a completed or finished container, ready to receive milk.

Mr. Schafer: Off the record, please.

(Discussion outside the record.)

Mr. Gariepy: Q. Doctor, do you want to qualify that answer with regard to whether it is ready to receive milk; or what do you mean by that?

A. Yes. This is a completely finished container.

Q. Without the milk?

A. Yes.

Q. In other words, the milk was not put in and the container was sealed as it is, with the milk not being poured in as it went through the machine?

A. Yes.

Q. Will you name other villages and cities that you started to name when I interrupted you there?

A. Detroit, Michigan, Dayton, Ohio. That represents those of which I have intimate knowledge.

Q. Do you know whether Toledo is using it?

A. Yes, Toledo is using it.

Q. Do you know anything about the suburban com-
41 munities about Detroit and Philadelphia?

A. I am not well acquainted with the suburban areas around Detroit and Philadelphia, although I know the single service container is used to a certain extent in the suburban areas.

Q. How long has that use been going on, Doctor, that you know of, in these various cities that you have just mentioned?

A. Its use has been going on for a number of years. The exact date, perhaps, is not easy to determine. The single service container has been rather widely used for three years. Its original use was around 1906.

Q. What was that, Doctor, if you know?

A. The single service container was used at that time for special uses, as in the case of quarantined residences. It was available for a milk plant licensed to use it for such special purpose as milk products, buttermilk, for quarantined residences, where they had disease, but that was the only use the paper container had, until 1928, when the development started, including the use of the distribution of fresh milk and cream.

Q. Do you know the fact with regard to the regulation of the City of Reading, Pennsylvania, in the use of
42 single service containers?

A. Yes.

Q. What is that regulation in the use of single service containers in that city?

Mr. Schaefer: I object to that.

The Master: What is the ground of the objection?

Mr. Schaefer: It is immaterial.

Mr. Gariepy: We have the ordinance here, Mr. Schaefer, if you want it, as bearing out the testimony. I have sent for a photostatic copy, certified by the City Clerk of the City of Reading, Pennsylvania, concerning that question, on this ordinance that I just mentioned, and I will have there here in the next few days.

The Master: What is the purpose of showing that ordinance?

Mr. Gariepy: The purpose of showing that is that that ordinance requires, in the case of quarantine, in that city,

in order to prevent the spread of disease, that single service containers, such as the subject matter of this inquiry, must be used.

The Master: Is that the only reason for introducing that ordinance?

Mr. Gariepy: That is right.

Mr. Schaefer: I will stipulate to that, that the ordinance of the City of Reading so provides.

43 The Master: All right.

Mr. Gariepy: Q. Do you know of other cities and villages, Doctor, that require, in cases of quarantine, that the single service paper milk container be used?

A. No.

Q. What do you know about the use of the single service container in Canada?

Mr. Schaefer: Where?

The Master: Canada, he said.

The Witness: A. There are about forty to fifty cities and towns in Canada now using the single service container for milk and milk products.

Mr. Gariepy: Q. Can you name them, Doctor?

A. Toronto, Hamilton, Sarnia, Peterborough, Guelph, are some of the prominent ones.

Q. From your experience and actual knowledge, how many cities and villages in the United States, would you say, are using single service paper milk containers today?

Mr. Schaefer: That is objected to.

The Master: I will let him answer.

The Witness: A. I estimate that about two hundred cities in the United States are using paper containers for milk.

Mr. Schaefer: I move to strike that, on the ground that the answer shows it is simply an estimate of the

44 witness.

The Master: I will let it go in, as long as his other testimony is in. It goes to the weight of it.

Mr. Gariepy: Q. Doctor, in your own research work in this field and in your contacts with the New York State Experimental Station, with Arthur D. Little and Company, with the International Paper Company, have you ever known or had any experience wherein disease has been shown to be caught or spread or contamination spread by reason of the use of the single service milk container?

Mr. Schaefer: That is objected to, on the ground that

what has come to this witness' attention does not tend at all to show the ultimate facts.

Mr. Gariepy: No, but it shows his experience.

The Master: I will let him answer.

The Witness: A. No.

Mr. Gariepy: Mr. Reporter, will you mark these photographs Exhibits 13 and 14.

(The photographs referred to were thereupon marked by the reporter Plaintiff's Exhibits 13 and 14, respectively, for identification.)

Mr. Gariepy: Q. Doctor, in your research work
45 and study in this field on paper containers, and especially with regard to milk containers, will you tell us whether or not there is any such thing in the industry known as a standard milk bottle?

Mr. Schaefer: I object to that.

Mr. Gariepy: What is the reason for the objection, Mr. Schaefer?

The Master: What is that?

Mr. Gariepy: What is the reason for the objection?

Mr. Schaefer: The ground of the objection, if the Master please, is this: One of the ultimate questions to be decided by the court in this case is whether the language of the ordinance of the city of Chicago which is here assailed, which requires that milk and milk products be distributed in standard milk bottles, means glass milk bottles, as the city contends, or means paper containers, as the plaintiffs contend. The witness' opinion on the question, the ultimate question of how that ordinance should be construed, is immaterial, in the first place, and, in the second place, he is not qualified to answer that question. That is a question for you or the court to determine.

The Master: Can you qualify him as to his knowledge of milk bottles?

Mr. Garipey: Yes.

46 Mr. Schaefer: Yes, he can testify to that, and from that testimony you and the court may determine what is a standard milk bottle.

Mr. Gariepy: Whether there is such a one, Mr. Schaefer.

The Master: You go ahead and find out what the witness knows about it.

Mr. Gariepy: Will you read the question to the witness, Mr. Reporter?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Master: The objection to that will be sustained. Put another question.

Mr. Gariepy: Q. Doctor, have you ever run across or found in your experience and studies an article known as a standard milk bottle?

Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: What is the reason, Master?

The Master: That is a conclusion of the witness, in view of the issues here. You ask him what kind of bottles he has ever seen and we will judge whether they are standard or not.

Mr. Gariepy: All right.

Q. Will you look at Exhibit No. 13 for identification,
47 Doctor. Have you ever seen those bottles before?

A. Yes.

Q. Where did you see them and what are they?

A. They are known as glass bottles, for the packaging—

Mr. Schaefer: May we take a look at it?

Mr. Gariepy: Wait until he gets through with his answer.

The Witness: A. They are glass bottles for the packaging and distribution of milk, and they have been observed in cities and towns and in stores.

Mr. Gariepy: Q. Have you observed them yourself?

A. I have observed them, yes.

Q. Will you look at Exhibit No. 14 and tell me what that is?

A. This exhibit illustrates a number of glass containers for receiving milk and milk products, such as sour cream and fresh cream, as well as fresh milk.

Q. Is there any one of those shown in that exhibit in your hand now that is considered in the industry or has been found by you to be, from your experience and study, the standard milk bottle?

A. No.

Mr. Schaefer: Objected to.

The Master: Objection sustained and the answer
48 may be stricken. Maybe we can simplify this a little bit. Do you concede that the only bottles that are being used for the purpose of distributing milk are glass bottles and these paper containers?

Mr. Gariepy: No. I concede that besides the glass bottle and besides the bottles illustrated in Exhibits Nos.

13 and 14, that there are twenty-six some other paper bottles used in the sale and distribution of milk.

The Master: Let us put it this way. Off the record, please.

(Discussion had outside the record.)

The Master: Will you agree that in various communities where glass bottles have been used for milk, the bottles have varied in shape and possibly in the thickness of the glass, or it may be in the color of the glass, and that in other communities, where they have used these paper bottles, they may also have been using glass bottles, and that the paper bottles have differed one from the other in shape and color?

Mr. Gariepy: And style.

Mr. Schaefer: Yes, I will agree to that, but I will not agree—

The Master: They have to vary in size, depending on what size they are.

49 Mr. Gariepy: The pictures show.

Mr. Schaefer: I won't agree, however, that the milk bottle which has been used in the City of Chicago has been anything other than the shape and made of the material with which all of us are familiar.

Mr. Gariepy: That does not answer it.

Mr. Schaefer: Now, if you will read, Mr. Reporter, the first part of the Master's statement, that is what I am driving at. Perhaps I did not express it properly.

The Master: Let us put it down that in the City of Chicago, up to the time the endeavor has been made to use the paper container—

Mr. Schaefer: Up to the present time.

The Master: (Continuing) —the bottles in use have been made of glass.

Mr. Schaefer: Yes.

The Master: And have been of a uniform design. Is that right?

Mr. Schaefer: Yes, and shape.

Mr. Rall: No, we will not admit that they have been of uniform shape. In recent years the Milk Dealers Bottle Exchange has tried to get a certain degree of uniformity, but we can show a large number of variations from, for instance, the bottle that the large dairies use.

50 The Master: But they have been using in Chicago a glass bottle.

Mr. Rall: Right. No question about the first part of that.

The Master: Of course, the size of the bottle depends on how much you want to put in it.

Mr. Rall: But the shape—

The Master: Whether it be a quart bottle or a pint bottle.

Mr. Rall: But the shape is just as much a part of the definition of standard as the material out of which it is made. So we won't concede that the shape of the glass bottle used in Chicago has been uniform in style.

The Master: I will leave it open to you to introduce evidence.

Mr. Schaefer: On that point?

The Master: On that point, as to what the difference is in the shape of bottles that have been used in the City of Chicago. Maybe that will save some time.

Mr. Schaefer: Off the record, please.

(Further discussion off the record.)

Mr. Schaefer: We are agreeing as to the fact—Mr. Horan just called my attention to this—we are agreeing as to the fact, but we are not agreeing that the fact
51 is material.

The Master: You can argue later on as to what you mean by a standard bottle in your Chicago ordinance.

Mr. Gariepy: I might call the Master's attention to the fact that there is no provision in the ordinance, in any paragraph or in words, defining a standard bottle.

The Master: We will get to that.

Mr. Gariepy: But I want to call it to your attention, since we are talking about the standard bottle, and the admissibility of the evidence on that. The witness has identified Exhibits 13 and 14 as portraying bottles he has seen in his research and study, and in connection with the standard bottle, since we have not arrived at a stipulation concerning No. 2 or 4 or 6 or any other number as the standard bottle, I am offering that in evidence, that is, Exhibits 13 and 14, as illustrating that point.

Mr. Schaefer: I thought we stipulated as to that.

Mr. Gariepy: No, we have not arrived at a stipulation. You said if we can agree as to Bowman using No. 2 or 4 or whatever they are using, maybe we can get some place, otherwise, there is a hiatus on this.

The Master: These bottles which are shown on the

exhibits are not confined to the City of Chicago, are
52 they?

Mr. Gariepy: No. Throughout the country.

The Master: Used anywhere?

Mr. Gariepy: Throughout the country, in the sale and distribution of milk at retail.

Mr. Schaefer: If they are bottles at all.

Mr. Gariepy: You can call them that. You are quibbling over words. They are containers, and your ordinance uses the word "container" as well as the word "bottle."

The Master: Some of these appear to be merely ordinary drinking glasses.

Mr. Rall: But they serve milk in them. They have caps on them.

The Master: The question is what is meant by a bottle.

Mr. Gariepy: That is right.

Mr. Schaefer: The question is now—

The Master: He just wants to introduce these pictures as showing various containers which have been used for milk throughout the country.

Mr. Schaefer: In various municipalities?

The Master: Yes, and not confined to the City of Chicago. As a matter of fact, are there any City of Chicago bottles shown in these pictures?

53 Mr. Rall: No.

Mr. Gariepy: Let me see. Just a minute, if the Master please. I think there is something here on that question that you raise by which we might be able to answer you.

The Master: Let the record show that Exhibits 13 and 14 are received in evidence as illustrations of milk containers in use in various parts of the country, other than in the City of Chicago.

Mr. Schaefer: Subject to our objection as to materiality.

The Master: Yes.

(Said photographs illustrating milk containers so offered and received in evidence were marked PLAINTIFF'S EXHIBITS 13 and 14, respectively, and are attached hereto and made a part hereof.)

Mr. Rall: The Master understands that there may be some bottles in use in the City of Chicago similar to these, but we are conceding that these pictures are not taken of the physical bottles used in the City of Chicago.

The Master: Yes.

Mr. Gariepy: Q. Doctor, with regard to the single service paper milk containers, are there various
54 shapes and sizes of those used throughout the cities and villages you have just mentioned?

A. Yes.

Mr. Gariepy: Mark that Exhibit No. 15, please, Mr. Reporter, for identification.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 15 for identification.)

Mr. Gariepy: Q. I show you Plaintiff's Exhibit No. 15 for identification, Doctor, and ask you to tell the Master what that shows and what it is.

A. There are two photographs here. The top one shows the various types and sizes of paper containers that are used in the United States for the packaging and distribution of milk and milk products. Those containers are those that have been in fairly common use, not experimental types. The second or lower photograph illustrates a number of foreign types that have been secured at my laboratory, representing containers that are used in Germany, Denmark, England and Canada. Those, too, portray various shapes and sizes.

Mr. Gariepy: I offer in evidence Exhibit No. 15. Counsel is looking at a copy of the same exhibit.

55 Mr. Schaefer: We object to the introduction of Exhibit No. 15, on the ground it is irrelevant and immaterial.

The Master: I make the same ruling previously made. You can raise the point later on by motion to strike. It may be received.

(Said photograph of various paper containers so offered and received in evidence was marked PLAINTIFF'S EXHIBIT NO. 15, and is attached hereto and made a part hereof.)

Mr. Schaefer: It is clear, I take it, that the printed matter on the back of the exhibit is of no consequence.

Mr. Gariepy: It may be considered as deleted.

The Master: It will be deleted.

Mr. Gariepy: Q. Doctor, in your field of science and in your research work and experience is there a common accepted meaning of the word "sterility" as it applies to the single service paper container?

A. There is not a commonly accepted interpretation.

Q. In your tests and your research concerning the sterility of containers, what facts are considered and accepted in the trade with regard to the containers being sterile?

56 Mr. Schaefer: Will you read that question to me, Mr. Reporter?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

Mr. Schaefer: I do not suppose I can object to that, if I do not understand the question. Maybe the witness can.

Mr. Gariepy: Q. Do you understand the question, Doctor?

A. Yes, I believe I do.

Q. Very well, will you answer it?

A. It is generally accepted in the trade that there is such a thing as essential or practical sterility.

Q. And when is that state arrived at?

A. That state is—

Mr. Schaefer: Now, if the Master please, I want to move to strike the preceding answer, which I could not anticipate, because I did not understand the question, and I want also to object to the pending question on the ground that the standard of sterility accepted in the trade, which I take it means the paper container manufacturing trade, is immaterial in this case.

Mr. Gariepy: No, this applies to milk, Mr. Schaefer. The question involves milk containers. We are not so concerned with the other container here, Doctor, and

57 my question to you relates to the sterility of milk containers.

The Master: Generally?

Mr. Gariepy: Generally.

The Master: Both glass and paper.

Mr. Schaefer: If there is any understanding in the trade as to the standard of sterility, it is entirely immaterial.

The Master: I was thinking as the witness was talking that there was a time in the stock yards when there was a standard, which was changed by the Food and Drug Act, and the standard accepted by the trade was not considered a standard which was acceptable to the government. Just how is what the trade thinks about sterility material to the issues here?

Mr. Gariepy: It is material, if the Master please, because of the fact that the commonly accepted or Webster's dictionary definition of sterility is not one that is in vogue and used every day in the matter of single service containers, that they arrive at a practical state as far as science and as far as human endeavor can put them, and when they arrive there that is the standard that they accept, and if this witness by reason of his experience and his knowledge in the field, is able to tell us what they
58 consider as sterility, he should be allowed to testify to that.

The Master: I will let you put the evidence in and we can argue later just what the word "sterile" means. Is the word "sterile" in the ordinance?

Mr. Schaefer: No, sir, but I still do not see what difference the trade standard of sterility makes. I do not see any purpose in wasting time on that.

The Master: I do not see it at this time, but I will let him answer.

The Witness: Would you care to have me enlarge further on that same subject, in view of the remarks that have been made by counsel?

The Master: Go ahead.

The Witness: A. When I mentioned the term of essential sterility and practical sterility, I had in mind a general condition that we find in industry generally, not only in this industry, but in other branches as well.

It is not common to encounter absolute sterility, and even if we expected it to be present or even if we considered it might be present, it would be very difficult to prove it. But in industrial activities and in industrial processes it has been found satisfactory to approach a condition of essential or practical sterility, as, for example, in the
59 manufacture of butyl alcohol. For the successful manufacture of butyl alcohol, which is a bacteriological process involving the use of micro-organisms, in order to obtain satisfactory results from an economic standpoint, contamination must be eliminated, and pains are taken to insure practical sterility. If in preparing their vats for the commercial production of butyl alcohol there should be a single organism or two, casual contamination, introduced, that would still not interfere with the practical results or the value of the work, so that casual contamination might get in and they would still have a condition

of essential or practical sterility. That has a connection that applies generally to the various industrial processes where micro-organisms are involved, and might also apply to medical processes.

Mr. Gariepy: Q. Are you acquainted with the regulations of the United States Public Health Service in regard to the sterility of paper milk bottles?

A. I am acquainted with—

Q. Under the standard milk ordinance of the United States Public Health Service?

A. I am acquainted with—

Mr. Schaefer: Is that two questions or one?

Mr. Gariepy: That is one question.

60 The Witness: A. I am acquainted with the standard methods that have been suggested by the American Public Health Association.

Mr. Gariepy: Q. What are they?

Mr. Schaefer: Just a moment. I move to strike that out.

The Master: Who is the American Public Health Association? Is that a government body?

The Witness: The American Public Health Association is an Association composed of workers in the various activities involving public health in the United States and Canada.

The Master: It is not a governmental body, is it?

The Witness: No, it is not.

The Master: Read the question put by Mr. Gariepy.

(Mr. Gariepy's question was read by the reporter as above recorded.)

The Master: There is an objection there, is there not?

Mr. Schaefer: And a motion to strike the answer as not responsive.

The Master: I will let him answer.

Mr. Schaefer: And there is an objection pending to the pending question, which is, as I take it now, what are the standards of the American Public Health Association.

61 It seems to me the question has been converted.

The Master: I will let him answer.

The Witness: A. The standard suggested by the Standard Methods Committee of the American Public Health Association states that a quart container for milk shall not contain more than a thousand organisms or a thousand colonies, and that the pint size shall not yield more than 500 colonies, and that the half-pint size not more than 250, or

stated in another way, as is sometimes done, particularly with the United States Public Health Service milk ordinance, one bacteria per cc. cubic capacity, or, in other words, 946 colonies per quart container.

The Master: Q. You say that is suggested by the committee?

A. That was the original suggestion of the committee, yes, of the Public Health Association.

Q. Has it ever been adopted by the Uublic Health Association?

A. That, I believe, is the commonly accepted standard. I do not know about what other processes they went through to make that generally applicable, but it is a suggested standard.

Q. It is a suggested standard by the committee?

A. It is one that is generally followed, as far as
62 I am acquainted, in conection with the United States Public Health milk ordinance.

Q. You mean, generally followed by whom?

A. Generally followed by towns and cities that wish to adopt that.

Mr. Gariepy: That wish to adopt the United States Public Health Service ordinance with regard to the matter of sterility and sanitation of paper bottles.

The Master: Q. You stated here that some committee made a suggestion. You have not stated that the association itself ever adopted the suggestion or transmitted it to anybody, and now you say that it is a standard which has been followed by such communities as wish to follow it. How many have followed it, if you know?

Mr. Schaefer: I move to strike out all of that as immaterial.

The Master: Well, the same objection has been made to the other testimony along this same line. I make the same ruling on that.

Q. How many have followed this, if you know?

A. It is impossible to state how many, without considerable detailed information.

Q. Do you know of any that have followed it?

A. The places that have followed that are in the middle-west and in the south. I believe to a certain extent the
63 City of Chicago follows the standard milk ordinance.

Q. I am talking about this question of sterility.

Mr. Gariepy: That is what he is referring to.

The Witness: Yes, that is what I am referring to.

Mr. Gariepy: Q. Do you know of any other standard or gauge concerning the number of colonies per quart bottle of milk?

A. Per glass bottle of milk?

Q. Per glass bottle of milk, yes.

A. No.

Q. That is, as used in the trade in the matter of testing for sterility and sanitation of paper bottles.

A. Of the paper bottle?

Q. Milk bottle.

A. Glass bottles, you mean?

Q. Yes, glass bottles of milk.

A. No.

The Master: Off the record, now, and let me see if I can get something here out of the way.

(Discussion had outside the record.)

The Master: Go ahead. I will let it stand.

Mr. Gariepy: Q. Doctor, have you made tests and performed research work with regard to the matter of the sterility of the Pure-Pak container shown before the Master as Plaintiff's Exhibit No. 2?

A. Yes, I have.

Q. Where is the foundation board for that Pure-
64 Pak container made and out of what is it made?

A. The foundation board for that Pure-Pak container is made at the West Virginia mill of the Cherry River Paper Company.

Q. Have you visited that mill?

A. I have visited that mill three times.

Q. Are you acquainted with the operation of that mill in the matter of getting the raw material or the pulp or whatever the paper board is made of, up to the time the finished product is turned out?

A. Yes.

Q. Have you made tests and performed certain research experiments in the matter of the content of the bacteria in that paper board?

A. Yes.

Q. Will you tell the Master what the paper board is made out of, in the first instance?

A. The paper board is made out of prime spruce pulp. The logs are obtained in the vicinity of the mill, and they are cut, washed, chipped and placed in chemical digesters,

with a cooking acid. The chips are digested under high steam pressure, approaching 90 pounds for a period of six hours or more. This process removes the encrusting materials, such as lignum, and then the waste liquor, the cooking liquor is washed out, and the pulp is washed.

The pulp is bleached in a bleaching solution of the strength of three and a half bleaching solution, a solulution of calcium or bleaching powder. The pulp is bleached to whiteness, and then the water is pressed out of it, and the fibres are disintegrated in an apparatus called a fibre disintegrator. This disintegration is carried on in sterile water, which has been sterilized with chlorine.

The pulp is then sent to the paper machine and is further diluted with sterile water. The fibrous material then goes to a machine and the fibres are webbed or matted together The water is drawn from the fibres. They mat together, are pressed together, bonded together firmly, and then they go over a long series of drier rolls, steam-heated cylinders, which at the surface of the cylinders obtains a temperature of about 360 degrees Fahrenheit. The surface of the board is in contact with the heated cylinder, and the surface of the board reaches temperatures between 175 degrees Fahrenheit to 200 degrees Fahrenheit.

This drying apparatus or procedure is an evaporating process. The water is evaporated and the moisture content of the paper board is reduced to a normal uniform, conservative amount.

The paper board coming off of the machine receives an ironing-out process to give it a gloss, in a similar way as the housewife sprinkles clothes and irons them, in order to give the paper board a surface gloss. This sprinkling that the paper gets is done with chlorinated water, which is sterile.

The glossy paper comes off of so-called calendars or ironers, and then is either rolled or cut into flat sheets. This is done mechanically.

The board is wrapped in clean paper and sealed. It is then transported to a freight car which has been cleaned and lined with paper. From this point the paper board is shipped to the converting plant.

Q. Do you know the converting plant for the paper container shown to you as Plaintiff's Exhibit 2, I think it is?

A. I am acquainted with the converting plant, yes.
Q. And where is the converting plant?
A. That converting plant is at Middletown, Ohio.
Q. And the name of the plant?
A. The Gardner-Richardson Company.
Q. Will you tell the Master the various means employed at the Cherry River Paper Company for the purpose of preventing contamination of the board during the
67 process other than those you have just enumerated now, from the time the pulp is brought into the mill and taken out as stiff board? What about the employees, what did you observe about them, as concerning their hands and their actions regarding this product, the raw and the finished product?
A. The employees observe sanitary precautions in the way of clean hands and sanitary behavior. There is mechanical handling of the stock, of the pulp and the stock, and all of the necessary precautions to prevent contamination from extraneous sources are taken.
Q. What are those precautions that you observed?
A. The paper board is not allowed to come in contact with the floor. The paper board is not handled carelessly, it does not come, in fact, into manual contact, other than may be necessary for adequate inspection.
Q. And in regard to this matter of sanitation, the use of the hands by employees, what is your experience with regard to the use of gloves or the use of hands in the handling of this paper board?
A. My experience has been that adequate facilities should be provided for the cleanliness of the hands, and nearby employees should be encouraged to use these facilities.
68 Q. Do you know what facilities exist at the Cherry River Mill for the washing of the hands on the part of any employees who come in touch with or handle this board?
A. Yes.
Q. What are they?
A. There are numerous facilities contiguous to or close to the various operations.
Q. Would you suggest the use of any gloves or any other article for the hands?
A. No, I would not make any such suggestion.
Q. Why?

A. I do not favor the use of gloves. I do not consider that necessary. I do not think that the gloves are sanitary, because soon after they have been used they become dirty, and then they are just an additional hazard.

Q. How many tests have you made upon the finished product, the paper board, as it comes out of the mill and is ready for shipment to the Gardner-Richardson Company, in behalf of the consuming public, for whom you said you were working in carrying on these tests and research?

A. I have made approximately three hundred and fifty tests.

69 Q. And when did you make the last test on this paper board here in question?

A. That test has been made within the last few weeks.

Q. Where was the test made, Doctor?

A. The tests of the boards are made in my laboratory at Geneva.

Q. What did the tests of the board reveal per cubic centimeter with regard to bacteria count?

A. The tests that I have made since January 1st up to date indicate or show that the paper board now being received by me, representing shipments that are being collected under bacteriological control and shipped to the converters, are essentially sterile.

Q. Doctor, in my question to you I said per cubic centimeter. I meant per gram, in regard to the paper board. What was the count that you found, Doctor, to support that conclusion that the board was essentially sterile, that is, the count you found per gram in regard to bacteria content?

A. I might say just before answering that that of these two hundred and forty tests that I have made over a period of two years and which I have tabulated carefully, 88 per cent of these tests give results of less than 100 colonies per gram of disintegrated paper board.

70 To explain somewhat about the significance of these 100 per gram, following preliminary investigations and early investigations on this subject the results indicated that 500 colonies per gram—

Mr. Schaefer: Just a moment. If the Master please, this is a long voluntary statement. There is a question pending.

The Master: I will let him complete it.

Mr. Gariepy: I withdraw that question, so he can answer.

The Master: Let him continue to go ahead.

The Witness: A. (Continuing.) The suggestion was made, as a result of research work, that 500 colonies per gram would be a reasonable and safe maximum, that milk container board should meet a standard of less than 500 colonies per gram. The people making this product have had no difficulty in meeting this standard. So that explains the significance of the fact that 88 per cent of the tests made on the 240 samples that have been calculated from June, 1937, to the present show counts of less than 100 per gram.

The Master: Let me ask a question right there.

Q. That is when the board is finished, is it?

A. That is when the board is finished, yes.

Q. How does that compare with the amount of
71 colonies present in a glass bottle, when it is just finished?

A. From my experience with the glass bottle, the counts are extremely variable. By extremely variable, I mean it jumps around a good deal. If I rinse a hundred or two hundred glass bottles, my counts will not be uniform, in my experience. This is considerable fluctuation in the results. In my experience, they vary from a few hundred to several hundred thousand per container.

Q. That is not the question I asked. What I want to get is the ultimate fact. This board is organic matter, is it not?

A. Yes.

Q. Would you consider glass as an organic material?

A. No.

Q. The materials composing the glass have been subjected to intense heat, have they not?

A. Yes.

Q. When the glass is finally completed—

A. I see what you mean.

Q. (Continuing.) —is there as much bacteria on the glass as there is on one of these paper boards?

A. I beg your pardon. I did not understand your question. You mean, as the glass is manufactured?

72 Q. Yes. I am trying to compare the amount of bacteria that is present at the same stage of manufacture of the board and of the glass.

A. Glass is manufactured at about 2500 degrees, a terrific heat, and, naturally, when that cools down that glass is sterile, as we understand sterility or can measure it in our bacteriological tests.

Q. Then you would say at the same point when the glass is just finished and the board is just finished, that the board contains more bacteria than the glass?

A. The board has, roughly, that count, but it is essentially sterile, while the glass after being manufactured is absolutely sterile, as we can measure it.

Mr. Gariepy: Q. Doctor, in regard to after the glass milk bottle has been sterilized or washed in the regular washing process, have you made any research into the colony count on that bottle then?

Mr. Schaefer: That is objected to. It does not show any count on the container.

Mr. Gariepy: You are contending the glass bottle is sterilized, and the glass bottle, as sold to the people of Chicago, is a better receptacle than the paper bottle.

The Master: He has already testified to that.

Mr. Gariepy: No, he has not on the sterilized bottle.

The Master: That the glass bottles do contain some
73 organisms in them after cleaning them.

The Witness: That testimony I just gave.

Mr. Gariepy: A sterilized glass bottle?

The Witness: A glass bottle at the time it is filled with milk.

Mr. Gariepy: He did give it?

Mr. Rall: We are talking about containers. He was talking about milk before.

The Master: I am asking him to give it again.

Mr. Rall: After the glass bottle has been used, not when it has come from this great heat.

The Master: Let us not have so many people asking so many questions. I will ask the question.

Q. After a bottle has been completed and after it has gone into use and milk has been put into it and the bottle has come back to the dairy and cleaned with such methods as are available, let us say the best method that is available for cleaning and sterilizing the bottle, are there any microbes or organisms or bacteria in the bottle?

Mr. Schaefer: That is objected to.

The Master: That is his question too.

Mr. Gariepy: That is my question.

The Master: I am reframing it for him.

Mr. Schaefer: That is objected to for this reason:
74 What the sterility of the glass bottles was after they were washed in the method that the bottles used by Dr. Sanborn were washed does not make any difference here. The question we are concerned with here, if we are concerned with it at all, is what sort of enforcement do we get of the ordinance of the City of Chicago which requires the washing and sterilizing of bottles. The condition of glass bottles will not be the same in any municipality in the country. It will vary from one to the other.

The Master: I did not ask him that. I asked him about the sterilization of the bottle with the best method available for sterilizing the bottle. I asked him the best one he knew of.

Mr. Schaefer: Mr. Reporter, will you read me the Master's question?

(The record was read by the reporter as above recorded.)

Mr. Schaefer: Why not ask him first if he knows?

Mr. Gariepy: Q. Doctor, you know, don't you?

A. Yes.

Mr. Gariepy: Mr. Schaefer wants to know if he knows.

The Master: Go ahead and answer.

The Witness: A. Yes.

Mr. Gariepy: Q. Then tell what you found, Doctor,
75 on making the test of the bacteria content of that bottle which has gone through the process that the Master has described in his question to you.

The Master: With the best method of sterilization available.

The Witness: A. With the best method of sterilization available it is possible to obtain, according to bacteriological tests, a sterile glass bottle. Some of them are essentially sterile. On the other hand, as I mentioned before, the counts fluctuate considerably and you may find several hundred per bottle or several thousand per bottle. Under the best method of sterilization, the best method of washing and sterilization, it is infrequent to find very high counts.

Mr. Gariepy: Q. And how does that count compare with the findings that you had or made on the paper container?

A. The paper container, talking generally now, if you

wish, shows the absence of bacteria in sterility tests, with broth,—

The Master: Q. With what?

A. Broth, bouillon.

Q. Yes.

A. (Continuing.) —in approximately thirty-five to sixty per cent of the cases. In about ninety per cent of the cases the counts are less than five per container,
76 which I consider practical sterility.

Q. Is that less than on a glass bottle?

A. As counsel said, the counts vary so from municipality to municipality, and they have had so many different experiences and the processes vary so that it would be very difficult to strike an average.

Mr. Gariepy: Q. What has been your experience as compared to the counts in the glass bottle?

Mr. Schaefer: Let the witness state.

The Master: Let him answer.

Mr. Gariepy: Q. What is your experience, is what the Master wants to know, from experiments you have run, as to the counts in the paper bottle as compared with the glass bottle?

A. My experience is that there is a higher degree of sterility in the paper bottle than in the glass bottle.

The Master: Q. Would you make that answer if the bottle were sterilized by the best method of sterilization in use in dairies working at almost top efficiency?

A. Well, that would be very difficult to answer, Master, for the reason that I would like to know the plant and have an investigation of it. It is quite probable that that may be true, but as far as my experience goes I still
77 think that the paper container for milk will contain fewer organisms than the best commercial practices for glass. The glass bottle can be washed best at home.

Q. The glass bottle?

A. If you take pains, as the good housewife does, it is very often sterile, particularly when she scours it out. In my experience, commercial practices are not comparable in efficiency with home practice.

Q. When you use broth in experiments with these bottles, is that hot broth?

A. No. The broth is bouillon. It is meat extract.

Q. It is not hot?

A. It is not hot. It is a liquid which grows a great

many of the common organisms, the majority of organisms that we know about in bacteriology, and that broth is sterilized and is introduced in a sterile condition into the paper container. The paper container is rinsed in such a manner as to wash down as well as possible all inside surfaces. After being rinsed, the container is incubated with the broth in it for a sufficient length of time to grow whatever organisms may be present. At the end of that incubation period the container is opened and examined for the presence of organisms that were there originally and grew, and from the results obtained the sterility of the container is calculated.

78 Mr. Gariepy: Q. Have you performed those tests containing the count in the paper container, with the broth test?

A. Yes.

Q. And were those performed a few months ago, that is, since January, 1939, with the broth test?

A. Yes.

Q. Doctor, is there anybody paying you for testifying here today?

A. No.

Q. Have you any interest in the outcome of this lawsuit, financial or otherwise?

A. No.

Q. Have you made tests with regard to the paper used on the glass milk bottle, with regard to the bacteria content in the cap?

A. Yes.

Q. When did you perform such tests and do such research work on caps?

A. During 1938 and 1939.

Q. With special reference to caps, did you also test the hooded caps, the inside of the hooded cap?

A. The material of the hooded cap, yes.

Q. The material of the hooded cap?

A. Yes.

Q. Will you tell the Master what your findings were

79 for the research work on the inserted cap, the one that goes down into the lip of the bottle, as well as on the hooded cap, taking one at a time, and stating what you found concerning bacteria in that paper.

A. The material of which the cap is composed is much the same, being prime stock, as the material going into a

paper container. The material of which paper caps and hoods are made is prime pulp of the types used in the manufacture of paper containers for milk and milk products. These cap boards and hood boards have comparable bacteria counts to those found in the paper container stock.

Q. Is there anything in the hooded cap that you found in your experience and in your tests that gives it more virtue than the inserted cap that goes down, that you pull up with a little tab?

A. Might I ask what you mean by virtue?

Q. Any more merit to the article, as far as bacteria or sanitation is concerned.

A. Bacteria content?

Q. Yes.

A. The bacteria content of the hood or of the plug cap may not vary at all in quality as far as bacteriological count is concerned.

Q. Now, Doctor, with regard to Exhibit 2, the Pure-Pak container in question before you, do you know whether
80 any secondary stock or reissued stock is used by the Cherry River Paper Company in turning out that product?

A. There is no secondary material used.

Q. Will you explain to the Master what secondary material is?

A. In general, Master, we have three types of material. We have the so-called prime pulps.

Q. Which are used on what?

A. Which are used in the manufacture of paper containers for milk and which are used in the manufacture of ice cream containers of the pint and quart sizes, of bottle caps and food trays and cheese boxes. Then we have a second class of high grade materials, which are not necessarily prime, usually not prime pulp, but nevertheless high grade pulp, which may be used in the manufacture of dried food containers, such as breakfast food cartons. Then we have a third class, called the waste paper class, of material collected from unknown origin, used in the manufacture of shoe boxes and that type of box.

Q. Doctor, do you act in an advisory capacity with regard to paper containers and paper stock used in the sale of food products and milk products for various municipalities throughout the country?

A. Public health men do ask my advice regarding
81 these products.

Q. And are you giving that at the present time?

A. Yes.

Q. Have you checked up to know whether they are accepting your advice concerning the quality of these containers, with regard to the sterility, bacterial content, and so on?

A. Yes, I have.

Q. With regard to the disintegration of the paper board, Doctor, in performing your tests, will you explain to the Master how that distintegration takes place?

A. Paper board is handled aseptically, that would be without any handling. It is received under instructions from the mill, properly packaged in sterile moisture proof wrapping. The wrapper is removed and handled in the preparatory work with sterile instruments, that is, sterile instruments such as shears. The paper board is cut into sections and delivered into sterile dishes. There are various types of disintegration apparatuses that we now have for breaking up or pulping or disintegrating this paper board. There has been one sent over here.

Q. Is this the one you used in performing your tests?

A. This is one of the types that I am using.

82 The Master: Possibly it would be a good idea to have a short recess here.

(A short recess was here had, after which the proceedings were resumed as follows:)

The Master: You may proceed.

Mr. Gariepy: Q. Doctor, on resuming, will you explain to the Master this distintegration process that is done by this machine that is before you?

A. I carried the description as far as cutting with sterile instruments the paper into sections into the sterile dish, which is a covered sterile dish. This is the container in which this distintegration is performed. This is one type of several.

The Master: Q. What are you trying to distintegrate now?

A. I am trying to disintegrate a portion of this blank.

Q. Of what?

A. Of this paper, in order to determine the bacteriological content.

Q. All right, go ahead.

A. This is one of several devices that may be used. There are four or five that are used successfully now and that give comparable results. I place in this container a certain amount of water, 300 centimeters of water, and I cover it this way, and sterilize under approved conditions,
and by approved methods, by an Autoclave. At the
83 conclusion of the sterilization the container is cooled
and the cut pieces of paper board used in the manufacture of the paper container for milk are introduced into that water.

The Master: Off the record, please.

(Discussion off the record.)

Mr. Gariepy: Mr. Schaefer, since the doctor has explained in his writings, what about the introduction of one of the writings in here, so the record has it, without going through it physically and orally here?

The Witness: That illustrates another type of disintegrator. I have used two types.

Mr. Schaefer: Let me see it.

Mr. Gariepy: I might say that this matter involves, in addition, the tests which the city asks to be made requiring the use of a substance known as safranin. The question was whether the disintegration test by using the machine that the doctor has it to be gone into fully, that is, the disintegration of the board. The doctor now is attempting to describe his method. Whether with the use of safranin or not, the purpose of both of them is to show how much absorption there is in the paper and what is in the material.

The Master: His present testimony is merely de-
84 scriptive of the method adopted in order to get at the
bacteria content of a piece of this board?

Mr. Gariepy: That is right.

The Master: Now, then, I am asking Mr. Schaefer whether he cares to have the details of the analysis spread upon the record, or whether he is satisfied with merely the statement that the method adopted was one whereby it would be determined accurately, according to the best science available, the bacteria content, and that according to that method certain results were arrived at by a competent analyst. Are you satisfied with that, Mr. Schaefer?

Mr. Schaefer: I am satisfied with what the Master has stated. I don't know about this.

The Master: All right, now, are you satisfied to have that statement in the record?

Mr. Gariepy: That is right.

The Master: Q. Now, then, can you give the results of your analysis by the method you have used? What do you call this method?

A. Disintegration method.

Q. All right.

A. I have given the results of this disintegration method in my previous testimony where I gave the count per gram per board. We proceed from this point with bacteri-
85 ological plates, in accordance with approved or standard bacteriological technique, and enumerate and count the number of organisms per gram of paper board or calculate the number of organisms per gram of paper board, based on the development of the colonies obtained from this pulp.

Mr. Gariepy: Q. Have you given that count, Doctor?

A. Yes, I have given the count.

Q. Doctor, after the paper board is sent to the Gardner-Richardson people and from there shipped to the milk dealer or dairy, ready for use in the machine and inserted in the machine, it receives a certain paraffin bath, does it?

A. Yes.

Q. And what kind of paraffin, do you know, is used on the Pure-Pak container in question here?

A. Fully refined paraffin is used.

Q. And what are the constituents of it?

A. Fully refined paraffin is the purest form of paraffin with which science is familiar. It is the last stage in the process of refinement, and it is inert and provides an effective way of moisture-proofing the paper container.

Q. What other object does it have or what other purpose does it serve, other than moisture-proofing the container?

A. Moisture-proofing is the primary purpose of the
86 paraffin. That is in my opinion. In addition to that, the paraffining may act as an additional sanitary safeguard, in that certain bacteria which may be present might be killed by the temperature of the melted paraffin.

Q. What is that temperature?

A. The temperatures used in the paraffin baths vary from 165 to 180, but in the present reference, in the present case, the temperature is approximately 172 to 176 degrees Fahrenheit.

Q. Are you acquainted with the Ex-Cell-O machine used in paraffining and filling the container, Exhibit 2 here?

A. Yes.
Q. Have you seen it in operation?
A. Yes.
Mr. Schaefer: Just one minute. You said in the present case the temperature is 172 to 176. What did you mean by that?
The Witness: Referring to the paraffining of this particular container, this particular type of container. The general range I gave applies to paper containers generally, for milk.
Mr. Gariepy: Q. It refers to the heat or the temperature of the paraffin bath?
A. Of the paraffin bath.
Q. Of the Ex-Cell-O machine?
A. Yes.
87 Q. Will you explain to the Master the precautions that are taken in the assembling of this Ex-Cell-O machine that fills the paper container, Exhibit 2, and paraffins it and seals it, with regard to the quality of material used and the number of hands employed in this process?
A. If I might just give one further statement. I have not finished my testimony.
Q. All right. I withdraw the last question.
A. I have not finished my testimony concerning the function or possible function of paraffining. I mentioned that in my opinion the primary function was to moisture-proof the container. It may also have another function, in that the temperature may be sufficient to kill certain bacteria. In another case it is possible that any organisms within the layer of paper board might be sealed in by this process of paraffining.
Q. What other food containers are used daily in the city of Chicago, that you know of, that contain a paraffin coating for the purpose of water-proofing or sealing in?
Mr. Schaefer: That is objected to as immaterial.
The Master: I will let him answer.
The Witness: A. Cheese boxes and paper straws and paper cups, butter boxes and kindred types of containers as commonly used in all cities and states are univers-
88 ally employed for the packaging of food.
Mr. Gariepy: Q. What about cream cheese that you may purchase?
A. Cottage cheese, cream cheese. I mentioned cheese containers. That includes cottage cheese mainly.

Mr. Gariepy: Mr. Reporter, will you mark this Exhibit 15-A for identification?

(The photograph referred to was thereupon marked Plaintiff's Exhibit 15-A for identification.)

The Master: Q. Does paraffin disintegrate or melt in very hot weather?

A. Paraffin may soften at high temperatures, such as we have on a day like this. It may become soft.

Mr. Gariepy: Q. Is there anything in the paraffin, Doctor, that is detrimental or would deteriorate or destroy the properties of Grade A milk put into a container.

A. No.

Q. By reason of the fact that it disintegrates a little with heat?

A. No.

Q. Is there anything in that paraffin?

A. No.

The Master: Q. Would it change the taste of the milk any?

89 A. In my opinion and experience, no.

Q. Would it cause an odor to get into the milk?

A. No.

Mr. Gariepy: Q. Is there any odor to this paraffin Doctor?

A. No.

Q. Do you know where this paraffin is mined or quarried, so to speak, and sent to the Ex-Cell-O machines as used by the plaintiff in this case?

A. No.

Q. You don't know where it comes from?

A. I do not know where its origin is.

Q. Do you know how it is shipped?

A. Yes, I know how it is shipped.

Q. Will you describe to the Master what precautions, as far as you know, are taken in the shipment of that?

A. Paraffin is shipped in slabs, contained in burlap bags, which are lined with muslin or some clean material, and shipped directly to the plant where it is to be used.

Q. Doctor, I show you Plaintiff's Exhibit 15-A for identification. Will you tell the Master what that is?

A. This is a picture of the Ex-Cell-O machine for forming and paraffining and filling the Pure-Pak container, the one before us.

Q. Were you present when the picture of that ma-

90 chine was taken there?

A. Yes, I was present.

Q. And how many men are used or employed in the matter of processing or filling in the blanks and turning out the finished bottle of milk here, as shown in Exhibit 2?

A. Two men were used.

Q. And what manual processes are employed from the time the blank is inserted in the machine until the time it comes out sealed and filled with milk?

A. A manual process is involved when the blanks are transferred to the machine. After that there is no manual contact until after the container is filled, sealed and stapled.

Q. And ready for delivery, packaged?

A. Yes, and ready for delivery.

Q. With regard to the cap, which contains a wire going through the top, what measures are employed to prevent contamination or disease with regard to the use of that wire?

A. The wire is heated at a very high temperature at the time it is inserted.

Q. And what temperature is that, if you know?

The Master: Very high.

Mr. Gariepy: Q. Does it sterilize the wire?

A. Yes. It is heated very hot. I do know the temperature, but at the moment it escapes me.

91 Mr. Gariepy: Did you look at that Exhibit 15-A, Mr. Schaefer?

Counsel suggests that I give him a photograph of Exhibit No. 15-A without the reading. I will bring it in and show it to him and have it approved. Any objection?

Mr. Schaefer: And substitute it?

Mr. Gariepy: And substitute it for Exhibit No. 15-A here.

Mr. Schaefer: No objection.

The Master: Then Exhibit No. 15-A may be considered in evidence.

(The photograph of the Ex-Cell-O machine so offered and received in evidence was marked PLAINTIFF'S EXHIBIT 15-A and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. Doctor, what precautions are taken by the employees in the feeding or the operation of this machine, Exhibit No. 15-A here, to prevent contamination?

A. The ordinary sanitary precautions are taken in the way of personal cleanliness and precautions are taken to see to it that extraordinary or unnecessary manual con-

tact is avoided, and if such should be the case such contact is eliminated by removing such blanks as are
91-A involved and discarding them. The facilities are provided for dismantling certain portions of this equipment for the purpose of cleaning. In certain cases direct sterilization of parts of the equipment is undertaken in the way of treating with alcohol and flaming, to insure that every step in the process will be such as will prevent the addition of micro-organisms to the container.

Q. What is done with the machine in regard to sterilization after each use, if you know?

A. I don't know.

Mr. Schaefer: I object to that.

Mr. Gariepy: Well, he doesn't know.

Master, may we suspend here with the witness?

The Master: Yes.

Mr. Gariepy: Shall we resume at 1:30 or 2:00 o'clock?

The Master: Make it 2:00 o'clock.

The Witness: Thank you very much, sir.

(Whereupon, at 12:35 p. m., a recess was taken to 2:00 o'clock p. m. of the same day, Wednesday, May 31, 1939.)

92 • • (Caption—316) • •

Hearing resumed before Master Grossman at 2 o'clock P. M. on May 31, 1939.

The same counsel present.

DR. JOSEPH RAYMOND SANBORN resumed the witness stand, and testified further as follows:

Direct Examination (Continued).

Mr. Gariepy: With regard to Exhibit 15 which was received in evidence, we have here an actual photograph of Exhibit 15 in two parts as well as an advertising photograph of the various sections of Exhibit No. 15, and the advertising section we will consider deleted. For your information, counsel for the City has agreed to accept this exhibit. Is that right?

Mr. Schaefer: Correct.

Mr. Gariepy: The former Exhibit 15 will be withdrawn and Plaintiff's Exhibit 15-A substituted in lieu thereof.

Master Grossman: Proceed.

Mr. Gariepy: Q. Dr. Sanborn, where micro organisms have been found in paper containers for milk in your
93 research work and your examinations, have you conducted studies of these types for the purpose of identification?

A. Yes.

Q. What have you found?

A. Where organisms have appeared, we have isolated them and made identification.

Q. What identification did you make concerning those organisms, those micro organisms?

A. Stereoptic studies in which harmless, non-spoor bearing bacteria are found, a few other types that are associated with nature and are harmless contaminants of spoors; these include a few mold spoors.

Q. Would you explain to the Master what you mean by these spoors?

A. In the case of a mold spoor, the spoor is a means of reproduction. The spoor is a seed.

Q. Have you investigated the various culture mentioned in order to bring out the various groups of micro organisms that will be present?

A. Yes. We have selected a number of different media in order to bring out the different types, the different groups of organisms that might be present; we have used in this connection both the new standard agar, the potato agar and other agar which brings out a few more mold features, fungus features. We have used the yeast extract agar and the nutrient broth which was mentioned
94 this morning.

Q. What do you mean in common every-day language by pathogenic bacteria as it applies to this, with regard to the single service paper container or the paper board here?

A. There is no problem of disease or pathogenic bacteria in paper manufacture.

Q. Are there any bacteria at all found in the paper board pathogenic bacteria?

Mr. Schaefer: Just a moment, please. I would like to have that last answer stricken as not responsive to the question.

Mr. Gariepy: Doctor, I will reframe that question.

Master Grossman: That may be stricken.

Mr. Gariepy: Q. Describe to the Master in common every-day language so that we all understand what pathogenic bacteria is, as found in your research work in paper boards or in any other type of paper containers.

A. Pathogenic bacteria of course are disease-producing bacteria and it is capable of causing disease in animals, human beings or plants, according to the definition of pathogenicity. I have knowledge that bacteriologists usually have of pathogenic bacteria and from that knowledge, in paper process manufacturing, there is not
95 any problem of disease or disease-producing bacteria in paper manufacture.

Mr. Schaefer: I move to strike the last portion of the answer as voluntary, as there is no such question.

Mr. Gariepy: Master, I suggest that it all be stricken and let me reframe the question and the Doctor can answer responsively.

Master Grossman: Strike it all out.

Mr. Gariepy: Q. Doctor, what is pathogenic bacteria?

A. Pathogenic bacteria are bacteria fungi having the property of causing disease.

Q. Have you in your research work and examination in the paper board that you testified about this morning, found in the container, Exhibit 2, any pathogenic bacteria?

A. No.

Q. You talked about paper board this morning, Doctor.

A. Yes.

Mr. Gariepy: I ask that this be marked Plaintiff's Exhibit 16 for identification.

Master Grossman: It may be so marked.

(A large roll of paper referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 16 for identification".)

Mr. Gariepy: Q. I show you a roll of paper with
96 the first sheet marked Plaintiff's Exhibit 16 for identification, and ask you if you know what that is.

A. That is paper board manufactured for the fabrication of single service type containers for milk.

Q. Do you know where that paper board was made? Can you identify it by looking at it?

A. Yes.

Q. Where?

A. At the Cherry River Paper Company plant.

Q. State what you had in mind in the testimony which you gave about disintegration tests and so forth.

A. That is the type of board.

Master Grossman: Q. That is the same paper that is found in these other exhibits which have been made up into containers?

Mr. Gariepy: Exhibits 2 and 3, that is the same paper board.

Master Grossman: Did you introduce that?

The Witness: That is to show how it goes in the roll, and the printing.

Master Grossman: You can describe it in the record, can you?

Mr. Gariepy: If you have got it sufficiently, then it's all right with me.

Master Grossman: What is the printing on it?

97 Mr. Gariepy: The printing with regard to the dealer and so on.

Master Grossman: Go ahead. I am trying to keep this record within bounds and not have a great big unwieldly record. All you have is a certain piece of paper board or a certain texture.

(Discussion off the record.)

Mr. Gariepy: Let the record show it is agreed by counsel for plaintiff and counsel for the defendants that the paper board the Doctor has testified to this morning comes in sheets approximately 50 inches by 40 inches; on one side of which is printed the name of the dealer and on the reverse side is blank; the reverse side being the inside of the paper container, the finished product.

Q. Is that right, Doctor?

A. Yes, sir.

Q. Doctor, does this paper board which we have just discussed here and which has been stipulated concerning description, contain sufficient moisture after it leaves the Cherry River Paper Company for pathogenic bacteria to live on?

A. No, or any other type of bacteria. The content is not sufficient to support the life of an organism.

Q. You referred to the amount of water that is con-

98 tained in there.

A. That is right.

Q. Why is water an element necessary concerning the life of bacteria?

A. Water plays a vital part in the growth, and multiplication of all forms of life.

Q. Have you in your research work and examination made tests concerning the amount of bacteria contained in a quart bottle of grade A pasteurized milk, in the milk test?

Master Grossman: Read that question back.

(Question read.)

Mr. Gariepy: Q. Not the bottle, just the quart of milk.

A. Yes.

Q. What has been your finding?

A. The count varies. It may be several hundred.

Q. Are those pathogenic or not?

A. No, they are not.

Q. Suppose that you were to allow this paper board that has been identified to stand under normal conditions of use anywhere in a factory and without being immediately converted into the finished container, put into the machine; what would be the result of bacteria living or increasing in that paper board?

99 Mr. Schaefer: I object to that. All of the conditions have not been described.

Mr. Gariepy: All right, let's take the conditions:

Q. The conditions in a factory, temperature 70 degrees for working conditions where paper board is stored in the factory or warehouse.

A. Protected?

Q. Yes, protected and covered over with such paper or other substance as they see fit to bring out?

A. Properly protected and properly stored, we have indications that the bacterial count in paper board decreases on storage.

Q. How long a period of time would be necessary to you to find such degree in that board?

A. I have noted decreases after two weeks, three weeks to a month.

Q. Do you know whether there are certain kinds of milk in use today prescribed by physicians that are innoculated with bacteria?

A. Yes, I do.

Mr. Schaefer: That is objected to as immaterial.

Master Grossman: Overruled.

Mr. Gariepy: Q. What kind of milk is that?

A. You have the so-called fermented milk, Bulgaricas

or Acidolphus and fermentation has been used therapeutically.

100 Q. What is the force of this bacteria that is innoculated into such milk?

A. The force?

Q. Yes, is it harmful or not?

A. No, of course that opens up a big field for discussion, but I think what you want there is this: For a long time it was considered that the formulas even desired organisms that developed in milk and are allowed to ferment milk, such as would be desirable in the human intestines; whereas in some cases intestinal troubles are accompanied by situations where it is coped with by taking certain of these in to ferment the milk and you supplement the bacteria, replace them with desirable type.

Q. In your testimony you described the process of the milling of paper board, the chlorine being used.

A. Yes.

Q. What is the effect of this chlorine that is used in the paper board?

A. The effect of it is a bacteriacide.

Q. What is the purpose?

A. The purpose is two-fold. It first provides a sterile water. The water is such an important part in the making of pulp and paper that it is necessary to use a

101 water that does not contain bacteria. Also by introducing chlorine, maintaining a certain chlorine residuent you can use that as a bacteriacide or bacteria killing solution and if there are any places that may be foci developed or bacteria having a certain amount or proportion, it is chlorinated again and it acts as a germicide.

Q. From your experience and research work, Doctor, is the single service container in the blank there, I think that is Exhibit 3, would you say that is essentially sterile without the paraffin?

A. Properly packaged that is essentially sterile.

Master Grossman: Q. Paraffin is put on there before the sheet goes out of the paper mill, is it?

A. No. The last thing just before it is filled with milk, this is formed like that, mechanically.

Q. You mean the box is first formed and then is dipped into paraffin?

A. Yes, and it is drained and it passes along and is filled with milk and is sealed or the staple is put in, the last thing.

Mr. Gariepy: Q. Will you explain to the Master on Exhibit 15, or show the manner of filling the container as each one of these are filled in the machine?

A. First there is the opening out of the container
102 and the forming of the container and the application of the adhesive in order to seal it.

Master Grossman: Q. Application of adhesive?

A. Yes.

Q. What kind of adhesive?

A. They have got to have adhesive, they use starch adhesive and sometimes tapioca starch or casein or a germ plastic synthetic adhesive, they are the general ones that are used. Then it is dipped in paraffin, it is immersed in paraffin and then drained, as is shown.

Mr. Gariepy: Talk louder, Doctor, please.

A. There is the paraffin dipping where you can see it drip and drains and then there is carried this chamber where the container is cooled and, there is the filling I spoke of where they pass it on and it is filled with milk. Then the stapling is right along there and it passes out here and it is picked up in rows.

Q. The fourth section is the finished product with the paraffin, the cooling, the filling and the sealing at the top?

A. Yes, sir.

Q. What temperature is that cooling process put at, as it goes through the cooling chamber shown in section 2?

A. I don't recall the exact temperature of the
103 cooling chamber.

Q. Doctor, you talked about some tests this morning. Do you know such a thing in your science as a rinse test with regard to containers and paper board?

A. Yes.

Q. What are rinse tests?

A. Rinse tests are bacteriological tests employing sterile water introduced into a container for the purpose of rinsing it, thereby freeing up, loosening from the walls the organisms that may be there and then proceeding to take out by bacteriological methods the rinse water.

Q. Have you employed the rinse test in the various experiments that you have conducted on the paper board and the single service container here?

A. Yes.

Q. Are there any other tests that are deemed better in the practice with regard to attempting to detect bacteria?

A. There is nothing better from the standpoint of enumeration, counting of bacteria, than the rinse method. The broth test mentioned this morning is a better method in that it is a much more severe test and will show the presence—the sterility, or the absence of organisms in a much more satisfactory way scientifically than by depending entirely on the rinse test.

104 Mr. Gariepy: I now ask that these documents be marked Plaintiff's Exhibits 16, 17 and 18 for identification.

Master Grossman: They may be so marked.

(The documents referred to were thereupon marked by the Reporter "Plaintiff's Exhibits No. 16," "Plaintiff's Exhibit No. 17," and "Plaintiff's Exhibit No. 18," all for identification.)

Mr. Gariepy: Q. Doctor, I show you Plaintiff's Exhibit 16 for identification which purports to be one sheet with printing on both sides.

A. Yes.

Q. Have you ever seen it before?

A. Yes.

Q. Is that issued, published and circulated to the public in general previous to the filing of this litigation? It is entitled "Single Service Containers for Milk and Milk Products", by J. R. Sanborn and Robert S. Breed, New York State Agricultural Experiment Station, Geneva, New York.

Mr. Rall: Give him the date.

Mr. Gariepy: You may look at it.

Mr. Schaefer: That is objected to.

Mr. Gariepy: Q. That suit was filed February 6th, 1939.

105 A. I know this is a very recent publication.

Q. Do you know whether this is before or subsequent to the litigation?

A. I don't know.

Q. You don't know?

A. No.

Mr. Gariepy: Well, then, I withdraw it. My point is I think all of this information that has been put out by the witness on the stand, with Dr. Breed, concerning single service containers and the matter of the sanitary aspect, has been put out previous to the institution of this lawsuit, are material.

Master Grossman: I cannot accede to that bold statement that anything that has been put out is material.

Mr. Rall: Certainly the Court in determining whether the City has acted reasonably or unreasonably, is entitled to put itself in the position that the City was with respect to the facts and the current knowledge public at the time, before this suit was filed, and it seems to me that on the basis of whether the City has acted reasonably, for instance the City might say—

Master Grossman: When was this ordinance passed?

Mr. Rall: The ordinance was passed some time ago.

Master Grossman: How long ago?

Mr. Gariepy: 1935.

Mr. Rall: 1935.

106 Master Grossman: Would that make everything published after that material here?

Mr. Rall: On the question of whether the meaning to be given the ordinance as to the definition of the standard milk bottle, I would say that anything that happened after that, of course, would not necessarily assist the interpretation of that, but whether or not the City has acted unreasonably in refusing to approve this container makes it quite important, it seems to me, for the Court to know what the City had before it at the time.

Master Grossman: There is no showing here that the City had anything before it.

Mr. Gariepy: I have asked the witness whether he had any request from Dr. Black or from Dr. Bundesen.

Master Grossman: When you get to something concrete here, we will pass on it.

Mr. Gariepy: I asked the witness this morning myself whether he had any efforts on their part concerning any interest.

Master Grossman: And he answered you, didn't he?

Mr. Gariepy: No. You ruled that he couldn't answer this morning.

Master Grossman: He said there had not been a request.

107 Mr. Gariepy: You struck it out, as I understood. If not, that's O. K. with me.

Master Grossman: I doubt whether it is material. I don't see that it is necessary for the City to go ahead and constantly request everybody to give whatever information he has on the subject. They may not have thought he is an authority on the subject.

Mr. Gariepy: But we think he is an authority.

Master Grossman: But that doesn't mean that they have to request from him all information that he might be possessed of.

Q. Did they ask you for anything, Doctor? Did the City ask you for any information?

A. I have provided manuscripts to Dr. Black.

Q. Have they asked you for anything, yes or no?

A. Yes.

Mr. Gariepy: Q. When was that, Dr. Sanborn?

Mr. Schaefer: I object to that.

Master Grossman: I will let him answer.

Mr. Schaefer: I can't see the materiality of it.

Master Grossman: I don't think it is material.

The Witness: That was during March or April.

Mr. Gariepy: Q. 1939?

A. Yes.

Q. Tell what City official made request of you for
108 this information or data?

A. Dr. Black asked for the manuscript or paper.

Q. Will you look at Exhibits 17 and 18, marked as Plaintiff's exhibits for identification, and tell me whether they were published for use by the public in general, for distribution to boards of health of municipalities, previous to the institution of this litigation?

Mr. Schaefer: That is objected to as immaterial.

Master Grossman: I sustain the objection. There are a great many of people writing articles in all the periodicals in the country and some of them may be sound and some not sound.

Mr. Gariepy: These are articles that were edited by this witness on the witness stand.

Master Grossman: Then he can testify what he knows about the subject and we will decide whether the City's action was reasonable or not, if that is in issue here.

Mr. Gariepy: The same thing applies to Exhibit 12, I take it, Master, the one I showed you this morning?

Master Grossman: Yes. Make your record and ask him whether those documents were published at a certain time. I will let you ask him that. I am ruling, counsel, that I will let you make your record.

109 Mr. Gariepy: All right.

Q. Doctor, will you tell me when Plaintiff's Exhibit 17 for identification, which I showed to you, was published?

A. That was published March 17, 1938.

Q. I show you Plaintiff's Exhibit 18 for identification. Do you know when that was published?

A. This is not one of my publications. I can find the date of publication on it.

Q. Do you know the date of publication of Exhibit 18?

A. The only date here on that is October 9, 1933.

Q. Do you know whether that is the date of the publication of that exhibit?

A. That is the date this report was made.

Q. With regard to Plaintiff's Exhibit 12 for identification, you think it was subsequent to February 6th, 1939?

A. The date is on here, April, 1939.

Mr. Gariepy: Let the record show that we offer to prove that these Plaintiff's Exhibits 12, 17, 18 and No. 16 were being generally used and circulated, published, and all except No. 12 were published for the general public and for the consumer cities and board of health, previous to the institution of this litigation.

110 Q. They were for general use and circulation upon request, Doctor?

A. Yes.

Master Grossman: Just to get the record clear, since this is both the taking of testimony under reference and taking of testimony by deposition, I think that possibly there ought to be something in the record to show the rulings that are made by the Master are approved, the part that is agreed to, by the party that is taking the depositions. Ordinarily on a deposition the examining officer does not have any power to rule on objections. I am permitting most of the evidence to go in so as to have the record made up showing what evidence was offered, but I think the record ought to be clear here that when I rule on an objection and keep evidence out, that the party who is taking the deposition is agreeable with that method of practice.

Mr. Rall: I have been waiting to see what you did keep out and I will make an offer for the deposition of anything that I think ought to go in, but your Honor has been very liberal in letting the things go in, and the order of court provides that the defendants may object when the deposition is offered in evidence, to its materiality, without objecting here, so that they are protected in

111 so far as the materiality of anything that goes in, but I join in the offer of these documents; of course that is understood.

Master Grossman: Whatever Mr. Gariepy offers, a joint offer is made by you.

Mr. Rall: Yes. As a matter of fact, the appearances show that he is of counsel in my case and I am of counsel in his case.

Master Grossman: Just so the record will be straight so far as the deposition is concerned, when I rule on something it will be applicable to the deposition unless you make an offer of proof.

Mr. Rall: Correct.

Master Grossman: Or you want to have the record show what your evidence is.

Mr. Rall: Correct.

Mr. Gariepy: Q. Have you printed reports of the conference held on sanitation of paper milk containers at Geneva, New York, in March of 1939?

A. No. I don't know of any such conference. There were two conferences on paper milk containers; one was in July, 1937, and one was in May, 1938, I believe. I think you have copies of them there.

Mr. Gariepy: I ask that this second conference on sanitation of paper milk containers be marked by identification as Plaintiff's Exhibit 19.

112 Master Grossman: It may be so marked.

(The pamphlet referred to was thereupon marked by the reporter "Plaintiff's Exhibit 19 for identification.")

Mr. Gariepy: And mark this one Plaintiff's Exhibit 20 for identification.

Master Grossman: It may be so marked.

(The pamphlet referred to was thereupon marked by the reporter "Plaintiff's Exhibit 20 for identification.").

Mr. Gariepy: Q. I show you Plaintiff's Exhibits 19 and 20 for identification; first, 19; what is that?

A. This is report of the second conference on sanitation of paper milk containers held at Geneva, New York, on May 2nd, 1938.

Q. Do you know anyone who, for and on behalf of the board of health of the City of Chicago, attended said conference?

Mr. Schaefer: That is objected to.

Master Grossman: Yes or no, do you know?

A. Yes, I know.

Mr. Gariepy: Q. What is the answer as to whether there was or there was not?

Mr. Schaefer: The whole thing is immaterial, if the Master please.

113 Master Grossman: Let him go ahead. I think it is immaterial.

The Witness: Yes.

Mr. Gariepy: Q. Who was there at that conference for and on behalf of the Board of Health of the City of Chicago?

A. If you insist, Master, I would just as soon answer that, but I would like to keep, so far as possible, names out of my testimony. I don't feel there is anything to be gained by naming him. If you insist, I will.

Q. You feel embarrassed if you name him and you will feel unembarrassed if you don't, is that right?

A. (No response.)

Master Grossman: I don't know, now, you are saying there is somebody who was there from the City of Chicago. They may say he did not represent the City of Chicago, if they know who he was, but I don't insist on it.

Mr. Gariepy: All right.

Q. Doctor, with regard to Plaintiff's Exhibit 20 for identification, what is that?

A. This is the report of conference on sanitation of paper milk containers, New York Agricultural Experiment Station, Geneva, New York, held on July 12, 1937.

Q. Were those articles, the substance of such conference, out for general circulation and publication to all 114 cities and boards of health?

A. Yes, sir.

Q. I will ask you the same question: Was there anybody for and on behalf of the Board of Health of the City of Chicago present at the time the conference was held as described in Plaintiff's Exhibit 20 for identification?

Mr. Schaefer: That is objected to.

Master Grossman: I will let him answer.

A. If my memory serves me, yes, but I have not carried those things in my mind for two years, so I am not positive.

Q. Was it the same person who was present at the other one?

A. Yes.

Mr. Schaefer: I did not object to his answering the question.

The Witness: If I might be allowed to say something, as a scientific man it has been my policy to, in conducting investigations of this sort, not name the companies or

name individuals because it would be sometimes embarrassing and it is sometimes faithlessness to the task I have undertaken; so in order to avoid anything of that sort, I just have not named names at all. That is the only reason for it.

115 Mr. Schaefer: Q. You are not afraid of embarrassing the City of Chicago by naming him, Doctor?

A. No.

Master Grossman: Before you go any further, has this exhibit been received in evidence, 15-A?

Mr. Gariepy: At the beginning of the afternoon session, 15-A was received in evidence in lieu of Exhibit 15, Master.

Master Grossman: All right.

Mr. Gariepy: I now offer Plaintiff's Exhibits 19 and 20 for identification.

Mr. Schaefer: I object.

Master Grossman: I sustain the objection to Plaintiff's Exhibits 19 and 20 for identification.

Mr. Gariepy: With regard to Exhibits 2 and 3, counsel—Exhibit 2 is an exhibit attached to the complaint and filed at the time of the filing of the suit, and I am offering that in evidence here at this hearing, that is Plaintiff's Exhibit 2. Plaintiff's Exhibit 3 is the blank that the Doctor has testified about.

Mr. Schaefer: I have no objection.

Master Grossman: They may be received.

(Said cartons so offered and received in evidence were marked "PLAINTIFF'S EXHIBIT NO. 2" and
116 "PLAINTIFF'S EXHIBIT NO. 3" and are attached hereto and made a part hereof.)

Mr. Gariepy? Q. Doctor, will you look at Plaintiff's Exhibit 3 and tell what relation it has to the finished container, Plaintiff's Exhibit 2?

A. It has a very direct and important connection.

Q. What is it?

A. The condition of the paper from which the container is made, the condition of the paper blank, the bacteriological condition of the paper determines the condition of the finished container. We have proven bacteriologically and by scientific methods that the paper blank that has a low bacterial count yields containers that have low bacterial count. On the other hand, paper board that has high bacterial counts—and of course there have been many such, because this thing has been in experimentation for a long

time, and you run into paper board that has higher bacterial counts and those containers will also have high bacterial counts; so there is a direct connection between the sanitary condition of the blank and the sanitary condition of the finished container. That was true in spite of any of the other factors I mentioned. Our investigation included for example investigation of paraffin. There was only three things, the paper, the adhesive that closes it and moisture proof paraffin that moisture proofs it. We
117 were able to show and it has been proven conclusively that the paraffin is not a source of appreciable contamination; in fact, fully refined paraffin and used paraffin are essentially sterile. My investigation of adhesives has shown that there is no contamination from the adhesives, I mean the adhesives used are essentially sterile; so that that eliminates those two factors, that we went to right from the start. That leaves the paper board and that is one of the direct reasons why I stated that the bacteriological condition of the original board determines the final condition of the finished container bacteriologically; it is fundamentally important; it is essential that the paper board have a low bacterial count.

Master Grossman: Q. Why?

A. Because the finished container, the paper, will be a sanitary container and will have a low bacterial count in spite of what treatment it might get. Moisture paraffining adequately done is the next thing, but it will still be the same container.

Q. Would you say the bacteriological count of the board is high, and that that would be immaterial if enough paraffin were applied?

A. No, that is not sufficient.

Q. Then the paraffin does not act as a coat of armor
118 against bacteria?

A. It is not an effective sterilizing agent.

Q. It is just an imperfect sterilizing agent?

A. It is a secondary function, the paraffining, to equal what effect it can along the less resistant forms of bacteria.

Q. Its first purpose is to protect against moisture?

A. To prevent the milk from getting into the paper board, for the convenience of the housewife, to prevent leakage.

Q. That is the first purpose?

A. In my opinion.

Q. The secondary purpose is to act as a coat of armor against any bacteria getting from the board into the milk?

A. That's right.

Q. But as to that, you say that there is some pores in the paraffin which would enable bacteria to get into the milk if there were enough bacteria in the board?

A. Yes, dirty contaminated paper board must never be used for milk because bacteriological tests on such board, even well paraffined board, are not satisfactory. The board used must be a sanitary bacteria-free board, essentially bacteria-free, to start with.

Mr. Gariepy: That is all, Mr. Rall. Do you care to
119 ask the Doctor any questions on your deposition?

Mr. Rall: I offer to show by this witness that among public health men generally and in the milk industry there is no such thing and was not in January, 1935, a glass bottle which was known or described as the standard bottle. I understood that your Honor refused to let him testify on that subject this morning.

Master Grossman: I don't think the question was asked on that subject. He was simply asked about what kind of bottles they were. You started it by asking him that and he did not follow it up with any other question. You put your question and I will rule on it.

Mr. Rall: Q. Doctor, is there now or was there in January, 1935, a glass milk container known among public health men or in the dairy industry as a standard milk bottle?

Mr. Schaefer: That is objected to.

Master Grossman: First define what you mean by standard milk bottle.

Mr. Rall: I am asking him whether there was such a thing known as that.

Master Grossman: Whether there was such a thing known as that?

Mr. Rall: Yes, that's right.

Master Grossman: Proceed.

120 Mr. Rall: One of our objections to this ordinance is that they do not define it.

The Witness: So far as I know, there was no such standard in such things.

Mr. Schaefer: I move to strike.

Master Grossman: I will let you cross-examine him.

Mr. Rall: Q. I show you Plaintiff's Exhibit 12 which you say was printed at what time?

A. April 9, 1939.

Q. Is that a reprint from some journal or paper?

A. It is a reprint.

Q. From what?

A. From the April, 1939, issue of "The Milk Dealer," which is a trade journal.

Q. And when did you say was The Milk Dealer from which that is a reprint published?

Master Grossman: Have you the same articles that you had before?

Mr. Rall: Yes.

Master Grossman: He gave the date.

The Witness: That is March or April, 1939, only a month or so before the address given in Cleveland, Ohio, last October.

Mr. Rall: Q. Do you know whether it was published before the 27th of March, 1939?

A. No, I couldn't state as to whether it was or not.

121 Q. Is Plaintiff's Exhibit 16 a reprint, and if so, from what?

A. This is a report of an address.

Q. Is the document itself a reprint?

A. So far as I know, the document is a reprint directly of an address given.

Q. From what periodicals?

A. It is a reprint, that is a separate reporting, a reprint of a paper read before the annual conference, the joint annual conference the American Association of Medical Milk Commissions and Certified Milk Producers' Association of America, at the Clift Hotel, San Francisco, California, on June 13 and 14, 1938.

Q. It shows on the first page, reprint from February, 1939, "Certified Milk."

A. Yes, sir.

Q. Can you state as to the extent or the nature of the circulation and what it is?

A. It is a journal.

Mr. Schaefer: That is objected to.

Mr. Rall: Q. Do you know where it is circulated?

A. No.

Q. Plaintiff's Exhibit 17 appears to be a reprint from the "Paper Trade Journal." Do you know anything

122 about the extent or the nature of the circulation of that periodical?

A. Yes.

Mr. Schaefer: That is objected to.

Master Grossman: Let him answer.

A. The "Paper Trade Journal" is generally distributed and subscribed by by the paper and pulp industry.

Mr. Rall: Q. Plaintiff's Exhibit 19 contains both the report of the second conference on sanitation of paper milk containers and an editorial signed "J. H. S." Who is that?

A. J. H. S. I believe refers to Dr. Schroeder who is editor of the journal.

Q. Is that a reprint from the journal of milk technology?

A. Yes.

Q. Both the conference and the editorial?

A. Yes.

Q. Do you know anything about the circulation or the extent of circulation of that periodical?

A. Yes, it is circulated widely among the technical departments of the dairy industry.

Q. Do you know whether or not it has any circulation in health departments?

A. Yes, it has a circulation among health departments.

123 Mr. Schaefer: I want to make the same objection with respect to the use of these periodicals.

Master Grossman: You may make a motion to strike at the conclusion.

Mr. Rall: Q. Plaintiff's Exhibit 20 is report of the first conference. That appears to be reprinted from the "Milk Sanitarian." Do you know anything about the extent of the circulation and nature of the Milk Sanitarian?

A. The Milk Sanitarian so far as I am acquainted with it—there has been a change, I think Milk Sanitarian is now the General Milk Technology.

Q. Was the circulation of that substantially the same as the present?

A. The Milk Sanitarian is this journal.

Mr. Rall: In the Ex-Cello case, I offer these EXHIBITS 12, 16, 17, 18, 19 and 20.

Master Grossman: I have excluded them in the other case.

Mr. Rall: Yes.

Master Grossman: I will have the same ruling here. They may be excluded.

Mr. Rall: They may be certified, however, as being offered.

Master Grossman: Yes.

124 Mr. Rall: That is all.

Mr. Gariepy: Doctor, I want to ask you one more question on direct examination:

Q. Taking Plaintiff's Exhibit 3, the blank there, before it is paraffined and having it filled with milk, would you say that that container if filled with milk after the paraffining is essentially sterile?

A. Yes.

Mr. Gariepy: You may cross-examine, Mr. Schaefer.

Cross-Examination by Mr. Schaefer.

Q. Where are those blanks printed, Doctor?

A. Those blanks are printed at the converting plant.

Master Grossman: Q. At where?

A. At the converting plant I mentioned this morning.

Q. What is that?

A. The Gardner-Richardson Company of Middletown, Ohio, which receives the flat paper and proceeds to cut and trim as necessary, and print.

Mr. Schaefer: Q. You are familiar with the operations of paper plants and paper mills, are you not, Doctor?

A. Yes, sir.

Q. You are familiar with the sanitary problems involved in the process of those mills?

A. Yes.

125 Q. What are the principal factors in a paper mill that determines the sanitary quality of the products of that mill?

A. The control maintained over the micro-organisms that may invade the mill or develop therein.

Q. What are the points of attack selected by the micro-organisms?

A. The micro-organisms will attach themselves in many cases to rough surfaces and if there are any dead ends in the system, pipe lines, that cannot be reached to clean, there they will develop and incubate.

Q. Will the quality of the raw material used in making paper influence the bacterial content of a finished paper board?

A. Yes.

Q. Will the use of green logs affect the bacterial content of paper boards?

A. No.

Q. It will not?

A. No.

Q. No effect whatever?

A. No.

Q. When you refer to prime logs, what do you mean by that?

A. I mean prime stock—not prime logs—price stock; that is wood pulp that has been manufactured mechanically or commercially direct from pulp wood, that is prime pulp.

126 Q. Will the use of logs that have pitch pockets in them affect the bacterial content?

A. No.

Q. How about the use of molded logs?

A. Molded?

Q. Yes.

A. No, there is no evidence that they will affect the bacterial count of the finished paper going through the process. The only way, if I might continue with that, that they might influence the development of organisms would be if air currents should carry spoors from the wood pile into the mill or in the plant if the workers might carry the spoors on their boots or clothing into the mill, but that is a problem of mill sanitation. In such cases in the presence of moisture, pulp might mildew but that is not a mildew, that is a fungus and that is not a bacterial trouble, and a fungi is more easily eliminated than some of these spoor-forming bacteria that are highly resistant to heat and chemicals.

Q. Will the presence of fungi in the wood affect the bacterial content of the board?

A. No.

Q. It will not?

A. No.

Q. That is because of the influence of heat?

127 A. Heat and chemicals.

Q. What is meant in the paper industry by the term "waste"?

A. Waste, in the paper industry, refers to waste papers—I suppose you mean.

Q. Is there a term—

A. Waste paper.

Q. Is there a term in the paper industry "waste paper"?

A. Yes.

Q. Waste paper?

A. Yes, sir.

Q. What does that mean?

A. Waste or mixed paper refers to a class of paper products that are collected and re-used, by a mill, in making fresh paper.

Q. Collected from where, Doctor?

A. Waste paper may be collected from offices, department stores, homes or from brokers, that is waste paper dealers acting as brokers.

Q. Is there any waste paper in the customary operation of a paper mill itself?

A. You have different classes of paper mills. In certain classes of paper mills there is never any waste paper enters that mill. There are some mills that are almost exclusively waste paper users, that is, much of their operation employs the use of waste paper, but you have many different classes of mills.

Q. (By Master Grossman.) You have what?

128 A. You have many different classes of mills, based on the type of raw materials they employ.

Q. Is any of this waste paper used in the manufacture of these cartons?

A. No.

Q. Is it possible that you could use or re-use some of these used cartons?

A. No. In the manufacture of containers like this?

Q. Yes.

A. No. The specifications are so rigid for manufacture of stock of this sort that it is impossible economically or from a sanitary standpoint to use or re-use any such waste paper.

Q. It is impossible from a sanitary standpoint?

A. Yes.

Q. As a physical proposition, it could be used?

A. No, not from a physical point of view, either, because of the physical conditions and tests that a board of this sort has to meet, I mean the specifications a board of this sort has to meet such as folding tests and strength tests and rigidity.

Q. If this material passed the test originally, why couldn't it pass it again?

A. You see, to use this same board—is that what you mean?

Q. Yes.

A. Properly handled trim from container of that
129 sort, of course that is a single service container, but trim from a container of that sort might be used.

Q. What do you mean by trim?

A. The part that is cut off here.

Q. Why couldn't the whole container be used? It has the pulp in it.

A. Of course, there is ink on it.

Q. What?

A. There is ink on it, which would not be permitted.

Q. But you might develop a process for removing the ink?

A. Yes, but it would not be satisfactory.

Q. Does that ink go into the pores of the container?

A. No. There is very little penetration of the ink.

Q. There must be some penetration in order to make holes?

A. For the surface fibers.

Q. They might just chip it up and then use the pulp. I was wondering if there might not be a reconditioning process here for these containers.

A. That is at the very surface.

Master Grossman: Go ahead. Pardon the interruption.

Mr. Schaefer: Q. What is meant by secondary stock?

A. Secondary stock is a vague term and it is diffi-
130 cult to define it because it means different things pending on who uses the term. Its vagueness is the biggest advantage in it.

Q. What does it mean as you say it?

A. Secondary stock is pulp or paper that cannot be classed as prime. It has been in the hands of converters or consumers.

Q. What does secondary stock mean as others use the term?

A. As others use the term they might mean what we call mixed waste papers.

Q. What does that mean, Doctor?

A. That is material I mentioned previously collected from institutions and department stores and homes.

Q. Is that all they might mean by the use of that term?

A. Yes, of course you have varying degrees or quality in such stock; you have such material as dump stock which does not enter into manufacture of any food containers or any type of food container, that is the lowliest and the last type in the classification I have mentioned.

Q. What is meant by chip?

A. Chip is composed of mixed waste papers.

Q. You cannot specify beyond that any particular kinds of mixed paper, waste paper?

131 A. No. It may not consist exclusively of the lowest grade of waste papers but be largely composed of waste papers which has an indefinite classification; it might be excellent waste paper such as might come out of an office building, executive offices in a large building from the top stories, you would get some excellent material, waste papers, bond paper, clean paper, but on the other hand, in other places you may get cigarette stubs and other materials in the waste paper baskets.

Q. What do the terms "broke" or "trim" mean?

A. Broke?

Q. Yes.

Master Grossman: How do you spell it?

The Witness: B-r-o-k-e.

Mr. Schaefer: Q. Trim is identical, they both are the same thing, Doctor.

A. Yes, broke and trim come under general classification of broke, but they mean something slightly different as used by the trade. Broke is paper that has come off of the machine, off of the paper machine, but is not going to be used, is not going to be fabricated further, it is not going to be converted; it is used, re-used, it comes off of the machine, if the machine breaks down, they have a lot of extra paper produced that they put in carts and take it back and use it. Trim may be illustrated by this

132 blank where you have the cuttings, the trim is the cuttings that are left over after the fabrication or during the fabrication or the converting of the paper blank, or any other kind of paper product where there is cutting or trimming.

Q. That is where you want to produce a definite shape or a piece of paper?

A. Yes.

Q. Is it physically possible, Doctor, by the use of

secondary stock either exclusively or mixed with what you call prime stock, to produce paper board which in outward appearances is identical with the paper board used in Plaintiff's Exhibit 3?

A. Well, that is not very clear to me, counsel, to answer your question directly as I think you probably mean it—I would say no. On the other hand, it is possible to cover that secondary stock with a so-called virgin stock or prime stock, covered or a layer over the surface, but it give it the appearance, if you dip into it, you will see there is this colored material which contains an ink and other foreign matter and you wouldn't mistake it for trim stock because it would be gray, it would be discolored.

Q. Isn't there any way of bleaching it as it is
133 going through the mill?

A. Yes, it can be bleached but it cannot be very satisfactorily at present.

Q. You mean there are such processes that remove all of the ink?

A. There are processes and they are not generally used because they are impossible of removing ink economically, that is a hard thing to do.

Q. Assuming a bleaching process was used and that secondary stock was used, would it be possible to produce a container, which from a physical examination, outward examination of the container, would be the same type of board as that contained in Plaintiff's Exhibit 3?

A. It would not appear the same.

Q. How would it differ?

A. In prime stock you have strength, you have rigidity.

Q. Can you determine one thing at a time, and can you determine strength by looking at it?

A. You mean by looking at it?

Q. That's right.

A. Of course, no, you would never mistake it, though; there is a softness, a lack of strength.

Q. How will you tell that, Doctor?

Mr. Gariepy: He is telling you now, counsel.

134 The Witness: The complete method of telling your board?

Mr. Schaefer: Q. I mean by ocular examination.

A. You might not be able to but I would be able to. After you have seen a number of them, you wouldn't mistake them at all. This has the substance and rigidity

that you can only get from prime stock. The other material that has been re-worked once is soft and tends to collapse.

Q. Can you determine softness and rigidity by feeling of it?

A. By feeling of it.

Q. By looking at it, first?

A. Aside from the color of it, you might not be able to, definitely, but it would be a different color.

Q. (By Master Grossman.) Distinguish between what?

A. Between this virgin material or prime stock, and paper board made out of mixed waste papers.

Q. Waste paper not necessarily consisting of used cartons?

A. Yes, any waste paper. It has a heterogeneous appearance, mixed waste paper has a heterogeneous appearance, I mean it is not uniform.

Mr. Schaefer: Q. Visible to the layman?

A. Yes.

135 Q. The uninitiated?

A. Yes. For example, if you will allow me to give you an example, a type of box which is referred to commonly as a shoe box, a box you see in the shoe store, that you would never mistake for paper intended for milk; that is the type of box you can make, it is flimsy, it hasn't got the characterization that you would feel and see.

Q. How about shredded wheat biscuit box, for example?

A. Now, to name any particular type of container or type of foods, dry foods may be packaged in containers that are not as carefully made or of as high quality materials as are foods that are moist or semi-liquid and yet in those cases there is very often a liner between the food and the container, but it may come in direct contact with it.

Q. Your thought is that containers of that type may differentiate from containers made of prime stock?

A. Yes.

Q. Without any scientific examination?

A. I don't know about the intelligence of your layman doing that, but a person of discrimination should be able to tell, for example a shoe box, over a paper container.

Q. How about another food container box with a paper container?

136 A. That would be the breakfast food cartons, or that container board from that ice cream fiber can.

A. Are you able, without a scientific examination of paper, to determine in every instance its bacterial content?

A. By looking at it?

Q. Yes.

A. I guess I don't understand your question.

Q. It is as simple as that; you understand it.

A. No, you couldn't estimate the bacterial count by visual examination.

Q. Now, can you determine without a scientific examination what type of material went into that container?

A. Yes, you can determine the type of material that went into the container.

Q. Now, suppose there was 99 per cent prime stock used and 1 per cent secondary stock. Can you determine that?

A. Yes, sir.

Q. You could?

A. Yes, sir.

Q. Without a scientific examination?

A. By examining the microscopic details, yes, the certain fibrous material there that you can detect.

Q. Could you do it without a microscope?

A. Yes.

137 Q. Suppose the percentage is one to one thousand?

A. Of course—

Mr. Gariepy: I object, Master, going into these infinitesimal matters. Let's take the subject matter that the witness has testified to on direct as made at a certain mill with a certain stock and let's not ramble all around because we will be here ad infinitum. The Doctor was only asked concerning the stock of the container before you. What else he has made and what it is made of and how it is made and the process, I think that ought to stay out. He is an expert witness and I am trying to get down to the meat of the thing.

Master Grossman: Overruled. He may answer.

A. I beg your pardon. If I might enlarge on that, if you are going down to any infinitestimal quantities there would be a time I would not be able to attempt it but if you notice on the ink, contaminated weak secondary stock, if that goes into a virgin material of this sort, you can detect it because of the difference in formation, because of the heterogeneous character that you notice when you

notice the presence of the material and the trace of ink even with the naked eye.

Mr. Schaefer: Q. And some other man who has spent his life in that work could make that differentiation?

138 Yes, sir.

Mr. Gariepy: I object. It is not that test but it is what this product before you now has been through or I will object.

Master Grossman: On a question of reasonableness, they might possibly take into consideration that cartons of other composition might be substituted.

Mr. Gariepy: But we are only on trial for this one container.

Master Grossman: It goes to the reasonableness of the ordinance. They might go sometimes as far as to forbid the use of something which is easily imitated.

Mr. Gariepy: We have no objection to telling all about containers made out of second grade stock.

Master Grossman: I will let him answer the question.

Mr. Schaefer: Q. Why is the use of paper previously commercially used considered unsanitary?

A. I suppose you mean in the consumer's hands, used by the consumer?

Q. Yes.

A. It is considered, it may be from our standpoint because of its unknown character because we don't know where it came from.

Q. Is it considered unsanitary from your point of view?

139 A. I consider mixed waste paper unsanitary for food containers when they come in direct contact with the food, depending of course on the character of the food. Dried foods have not the strict requirements that moist wet foods have.

Q. Is broke or trim as sanitary material for the manufacture of paper container as virgin pulp?

A. It is virgin pulp. Broke trim is virgin pulp. It has never been in the hands of the consumer.

Q. It is not virgin pulp in the strict sense of the word, is it?

Mr. Gariepy: I object to arguing with the witness.

Master Grossman: Overruled.

A. In the strict sense of the term, broke is virgin pulp.

Mr. Schaefer: Q. What does virgin pulp mean?

A. I don't know whether there is a dictionary definition of that or not but we have defined it as pulp that has not previously been used for commercial purposes.

Q. I am aware of that, Doctor. What I am getting at is the basis of your definition and what I want to know is whether or not that is the ordinarily accepted meaning of the word "virgin pulp"?

A. Yes that is.

Master Grossman: Q. What is the broke, then?

140 A. The broke is virgin pulp which has not been out of the mill. It is just some additional paper that has been brought back to the machine and put through the process again.

Mr. Schaefer: Q. What term describes pulp which has not yet been made into paper?

A. Pulp that has not yet been made into paper?

Q. Yes.

A. Pulp that has not been made into paper is called lap stock.

Q. As distinguished from virgin pulp?

A. No, that is not the case. Pulp for paper making is bought into the form of laps for thick sheets. That is virgin pulp that is going to be broken up.

Q. That is virgin pulp?

A. That is virgin pulp.

Q. That means pulp that has not yet been made into paper?

A. Yes.

Q. And that is what virgin pulp means?

A. That plus the paper, the pulp that is made directly from the wood—it did come from the wood—you can make your pulp directly from the wood or I can buy it from you as pulp. It is all virgin pulp.

Q. But it is pulp which has not yet been made into paper?

141 A. You can sell pulp.

Q. Is virgin pulp, pulp which has not yet been made into paper?

A. No. It is not as easy as that.

Master Grossman: Q. What?

A. It is not as simple as that.

Mr. Schaefer: Q. What difference is there between broke and trim and other previously fabricated paper, that leads you to say that the one may be included in the term virgin pulp and the other may not?

A. Will you give me an example of that, please?
Q. I mean, do you regard broke or trim as virgin pulp?
A. Yes.
Q. As being, as you say, your definition of virgin pulp?
A. Yes.
Q. What is the basis for the distinction between permitting the inclusion in your definition of broke and trim and excluding other secondary stock?
A. The broke I speak of has never left the mill, it has just been made into a sheet and is taken right back and re-made; it has never left the mill; it continues to be virgin stock. I object to the use of "waste paper" for
containers for liquid or semi-liquid foods because the
142 mixed waste papers are all of unknown origin, it may
come from homes where there is disease; it may contain cigarette stubs and all sorts of waste materials.
Q. How is your broke handled in a typical plant?
A. Broke is removed directly from the machine where it is produced, into cars, and taken back almost immediately to the beater or fibre disintegrater where it is immediately disintegrated and sent right back over the machine.
Q. Do you regard broke or trim as sanitary a material as lap stock?
A. Properly handled, yes.
Q. You see no difference between the two?
A. I don't like to include trim with broke because trim —there are so many different ways of producing trim, and so many different sources of it. When you speak of broke, you mean it is produced by the machine where the paper is being made and is specific virgin material, specific prime stock and if trim happened to come from that same plant, some sort of trim, ends or the end of a roll or something like that, that would also be specific prime stock.
Q. Suppose it did not come from that mill but nevertheless it has never been previously commercially
143 used; would that be virgin stock?
A. If it had never been previously commercially used and the mill from which it is produced was also operating under micro biological control, I would consider that prime stock.
Q. That is micro biological control?
A. Under approved bacteriological control.

Q. By whom?

A. In the ultimate analysis it will be the health department.

Q. What health department?

A. The city that is interested in controlling or supervising the manufacture of the container and board to be used in that city.

Q. That is, you regard it as important for the health department of a city which is permitting the use of paper containers to exercise sanitary control over conditions in the mill in which the paper is made?

A. They should have a knowledge of sanitary conditions there.

Q. How should they acquire that knowledge?

A. One way of acquiring that knowledge—and mind you I don't say how they should acquire it, but one way to acquire it is to designate a laboratory as might be done in the case of vitamin D milk, designate a laboratory for the sanitary survey or supervision of that plant, to 144 conduct such detailed and exhaustive tests as the health department may not be equipped to do it because of lack of facilities.

Q. Is there any other method that is recognized, Doctor?

A. There is another method I think and that is the one I have in mind is for a health department to authorize a qualified person to represent the Commissioner of Health and inspect for the health department of the city that milk, giving a report to the Commissioner of Health on his findings.

Q. In the handling of broke or trim, can you say whether it is used properly, consistently, it depends on how it is handled; how can you determine how it is handled; how can the health department determine how it is handled?

A. That would be part of the supervision and program of supervision or control that the health department worked out. I happen to know something about the way health departments are doing today and I am giving you the benefit of that in my testimony.

Q. That involves inspection of the mills?

A. That involves inspection of the mills.

Master Grossman: Q. That is inspection of the mill at

a place other than the community in which the health
145 department operates?

A. Yes. They can authorize inspection in any part of the country they want to.

Mr. Schaefer: Q. Do you know whether or not other mills could afford to produce paper containers unless they used broke or trim as an economic proposition?

Mr. Gariepy: I object to that because it is speculative and that would be a matter of the economic operation of the mill and that is not before you.

Master Grossman: I will let him answer.

(Question read by the reporter.)

The Witness: Yes, they could afford to operate without the use of broke or trim.

Master Grossman: Q. What would they use?

A. They would continue to run continuously and any trim or broke that was produced would be used for some other grade of paper, such as shoe boxes or something of that sort and the main line going along in a continuous process.

Mr. Schaefer: Q. Doctor, is the use of contaminated water supply a problem in the sanitation of paper mills?

A. Yes.

Q. Is it a pretty serious problem?

A. No.

Q. Do you regard it as the most serious problem?
146 A. No.

Q. Doctor, I am reading from what purports to be a copy of a paper presented by you before the Empire State Section of the Technical Association of the Pulp and Paper Industry, Syracuse, New York, November 13, 1937, reading this statement: "Mills are now viewing critically their water supplies and the condition of raw materials. They are studying the problem of white water utilization from the standpoint of recontamination of the system by undesirable bacteria, as well as from economic and operative aspects. Plants so fortunately situated as to have naturally pure process water do not ordinarily find it difficult to control the development of micro-organisms. Polluted supplies present at the ontset a serious obstacle to mill sanitation, requiring careful attention to purification problems which may be aggravated by wide fluctuations in degree of pollution. Nearly all of the undesirable mill contamination comes from water, though

occasionally evidence points to organisms from pulp wood, lap stock, and various raw materials."

Mr. Gariepy: I object to the question unless counsel shows the entire exhibit concerning which he is quoting from and let the doctor identify it as evidence.

Master Grossman: Maybe the witness can answer
147 without examining all of that.

The Witness: Yes, I have no objection. I can answer without examining the whole document.

Master Grossman: Let the witness answer you first, he may be able to explain.

The Witness: I want to answer your question which is, is it the most serious something of that sort. I did say in the article it was a serious problem but you asked me if it was the most serious. I had in mind something—

Q. I will come to that.

A. That is one of the other problems, and also if I may make another statement.

148 Q. You will have a chance to go through the whole business, Doctor, if you want to wait.

A. Well, I happened to think that before the crowd in Syracuse which I addressed was composed of men who are not making board of this sort but they are making paper such as news print paper which does not require extra precautions, and, hence, I had to emphasize the importance of water purification, which I wouldn't have had to do to these people that use pure mountain water and use a sand filter and chlorination.

Q. (By Mr. Gariepy.) As used in the container here?

A. That is the one I am speaking of.

Mr. Schaefer: I will ask to have this document marked Defendant's exhibit 2 for identification.

Master Grossman: It may be so marked.

(The said document referred to was thereupon marked by the Reoprter "Defendant's Exhibit No. 2 for identification.")

Q. (By Mr. Schaefer.) Will you examine that, Doctor, and tell me what it is, please?

A. That is a copy of the manuscript I read, which is not published, at the Syracuse meeting of the Empire State Paper Section of the Technical Association of the Pulp and Paper Industry, Syracuse, New York, November 13, 1937.

149 Mr. Schaefer: I offer that document in evidence.

Mr. Rall: Are you offering it?

Mr. Rall: I agree that it go in.

Mr. Schaefer: Yes.

Mr. Gariepy: No objection.

The Master: It may be received.

(The document, consisting of seven pages, photostatic copy, entitled "Microbility in Pulp and Paper Manufacture," so offered and received in evidence, was marked DEFENDANT'S EXHIBIT NO. 2 and is attached hereto and made a part hereof.)

Mr. Schaefer: Q. Doctor, what are some of the problems in connection with the sanitation of paper mills?

A. Eliminating from mill systems foci of bacterial accumulation or development.

Q. What are some of those foci?

A. Those foci I started to enumerate and did enumerate a few in my original testimony. They are rough surfaces of equipment and dead ends and storage chests that are not washed where pulp is allowed to accumulate and where mill slime is allowed to develop, that is on the rough surfaces, and pipelines where no effort is made to curb the development of micro-organisms.

150 Q. How about white water? What is white water?

A. White water is re-used water.

Q. How about the use of white water, is that a problem in paper mill sanitation?

A. It is a problem in paper mill sanitation, stating generally.

Q. That is what I am asking about, Doctor, so let's keep talking the same language.

A. Yes.

Q. What is the most common source of water supplies of paper mills?

A. The most common source of water supply of paper mills is the use of rivers, artesian wells, canals, lakes.

Q. How about streams?

A. Sure, those head up a river. I was thinking of them as you asked the question. There are so many mills in the country and so many different types of mills. There are a great many using artesian well water and a great number are using river water. I suppose river water is the most common of all mills, river water is used most frequently by mills throughout the country, throughout the continent.

Q. Is there normally a direct connection between the

degree of pollution of water supply of the paper mill and the bacterial content of paper board made in that mill?

151 A. Speaking of the water supply, that is not treated?

Q. Yes.

A. Yes, water supply straight from the river.

Q. Yes.

A. Yes, there is a direct connection.

Q. Is the degree of pollution of the water supply of paper mills constant or does it vary?

A. It varies.

Q. It varies?

A. Yes.

Q. With what does it vary?

A. I beg your pardon?

Q. With what does it vary?

A. It varies with a number of factors. It varies with the amount of pollution the river receives, speaking now only of rivers because there is no pollution problem in connection with artesian wells; but in the case of river water supply it varies with the contamination it receives from the source of pollution.

Q. From what?

A. Sources of pollution, if it happens to be sewage or seasonal factors, it varies with the season. In the fall of the year with decaying leaves it might have a higher content of organism due to the increase in organic content.

Q. What about the spring of the year?

152 A. In the spring of the year a similar situation, with the spring freshets, the count in the river water goes up in the spring.

Q. Is the variation the same from one mill to another?

A. No.

Q. Is it the same in the same mill from one year to another?

A. No.

Q. It is a variable factor?

A. It varies continuously.

Q. What methods are available, Doctor, to determine the sanitary quality of the water supply in a paper mill?

A. By sanitary and bacteriological analyses.

Q. That means to take a sample of the water supply and analyze it according to the number of bacteriological methods?

A. A chemical method as might give a clue to pollution.

Q. Does the turbidity of the water supply affect the bacterial content of the paper board produced by the mill?

A. No. Turbidity may be due to a variety of causes. A turbid stream may be practically sterile. I find very little relation between the turbidity and the bacterial content of paper.

The Master: Q. Between what?

153 A. Between turbidity and the bacterial content of paper.

Q. How do you spell that?

A. Turbidity.

Q. Turbidity?

A. T-u-r-b-i-d-i-t-y.

Q. Turbidity.

A. Yes.

Mr. Schaefer: Q. That is suspended matter?

A. Yes, that is suspended matter.

Q. What are the causes of the build-up of slime in the paper mill system, Doctor?

Mr. Gariepy: If the Master please, I don't see the materiality of this inquiry. I asked nothing on direct about slime and build-up in a mill or in some other mill. As to the Cherry River Mill, we went into one mill only.

The Master: Mr. Schaefer may be of the opinion, and is trying to build up some evidence to support an argument that possibly there is a need for inspection of the whole process of manufacture and that may be a sufficient reason for excluding these cartons.

Mr. Gariepy: Because there is a need of inspection and examination in other mills wouldn't make the mill in question contaminated.

The Master: They may make a general rule applicable to all mills and they may decide to broaden the inspection or that the inspection may be too great so that

154 they will exclude that form of container. I don't know. Is that your theory?

Mr. Schaefer: Particularly that, but I would rather not disclose the whole thing.

The Master: I will let him put in his evidence here.

Mr. Rall: If the finished product is sterile, they can take it apart with microscopes and broth tests and rinse tests.

The Master: I would like to ask you this question: Why do you say this is a single service container? Is that it?

A. Yes.
Q. Why do you call it a single service container?
A. It is to be used only once and then discarded.
Q. That is if the mandate is obeyed?
A. Yes.
Q. What is there to prevent these cartons from being used again?
A. Well, they can't be used again for milk.
Q. Why not?
A. Well, according to the law they couldon't be filled by dipping and they would have to go through a regular dairy, milk plant, which is inspected.

Mr. Rall: The carton is destroyed.

155 The Master: If it is destroyed.

Mr. Rall: No. The carton is defaced in the process of opening it. I will bring over some more dummies and your Honor can see that in opening this carton is torn and it is possible that the consumer might, by getting a funnel, pour it back, but so far as any commercial use the minute that pouring lip is torn you never would fool anybody into believing that it had not been used before.

Mr. Gariepy: You could not paraffin it back into shape.

Mr. Rall: I will bring over some dummies.

The Master: I understand your point. I am asking the witness what is there to prevent this carton being used again, whether the same size or cut down size.

A. It could not be used for that purpose. You cut it down and you would not have a suitable container and it is in the hands of a consumer and it will probably be destroyed and there wouldn't be any way of collecting the containers and these milk plants are under control and I don't see how it could be filled again.

The Master: All right.

Mr. Schaefer: Q. What are the causes of the build-up of slime in the mill system?

A. Micro-organisms are the cause of slime.

156 Q. Is a polluted water supply a contributing factor?

A. Yes, sir.

Q. Is the condition of the pulp wood as it goes into the mill system a contributing factor?

A. That is a very minor factor. We have been unable to show any direct connection. The treatment the wood gets is sufficient to kill all slime forming bacteria in the wood.

Q. How about air dissemination; does that contribute to slime?

A. That doesn't contribute to slime. It contributes more to the condition called mildew which is in the mill but there would be a fungus, there would be a colored spot on the pulp but that is not a sanitary matter. It is sort of an economic problem, it means losses to them, and that is why they try to cut that down.

Q. Is polluted water supply the only cause, in your opinion, for slime?

A. Most slime organisms have there origin in water supplies.

Q. Is there anything else?

A. Previous slime accumulations, slime development has been going on for twenty years and that is a continuous source of further contamination and even though you use a sterile water supply, unless you eradicate the slime
157 from the mill you would still have it, so that the previous accumulation plus the polluted water are the major causes of slime organisms getting into the mill system.

Q. The presence of slime built up in the mill system affects the bacterial content of the paper board?

A. Yes, sir.

Q. How can the presence of the build-up of slime in mill systems be determined?

A. By visual inspection, it is an accumulation in a plant site so it can be handled, it can be scraped.

Q. Are any of the pipes under the floor in the mill?

A. Yes.

Q. The accumulation might be in those pipes?

A. It might be.

Q. You might have to take up a floor in order to see it, visibly?

A. Yes, it would probably be after the ceiling of the floor below so that you could get at it from the floor beneath.

Q. But it would not be visible unless you opened up the pipes?

A. It would not be visible but you would see it in the materials coming out of the pipe.

Q. How would it affect those materials, Doctor?

A. In other words, how would it affect pulp?

Q. That is right.

158 A. It discolors pulp, causes discoloration.

Q. Uniformly?

A. Not uniformly; it breaks off, I can tell by your question, counsel, that you know a little about mill slime, and I am quite sincere about that. It breaks off at different times when the slime mass becomes too heavy and becomes accumulated sufficiently, it breaks off in masses; some parts are lodged, lined up, and other parts might be a little more—but you asked how it affects pollution. You can tell there is or is not slime by holding it up to the light. It may have an odor.

Q. Is it possible to make that inspection as the paper comes off of the final roller before it is rolled out?

A. For slime?

Q. Yes.

A. Yes.

Q. You can make that right at the mill, can you?

A. I beg pardon?

Q. You can make that right at the mill?

A. You can make that right at the mill, that is true. They don't want to make paper containing slime because it spots and doesn't sell.

Q. Doctor, I think you have answered this, but to be sure, is there any predictability about the extent of slime in paper?

159 A. A trained man, yes.

Q. He can predict it in a paper run?

A. A certain way, yes, there will or there will not be slime, due to his knowledge of the condition of a mill.

Q. But the intimate knowledge of the condition of the mill would be required to determine that?

A. Yes.

Q. What determines the rate of accumulation of slime?

A. The type of pulp going through the system, the temperature of the water or pulp, due to the time of year, sometimes low bacteria is maintained and some times higher bacteria.

Q. Those factors are variable, from mill to mill?

A. Yes, sir.

Q. Are they variable in every mill?

A. They are variable at any mill.

Q. How is the sanitary problem of slime accumulation attacked?

A. The first step is to eradicate all existing forms of slime and through a physical process of hosing out and by brushing, by scraping or sluicing and after the slime has been eradicated as far as possible by physical means,

chlorinated water is introduced or some germicide which will kill the organisms remaining.

160 Q. You can save my going back by saying what other germicides you have in mind right there.

A. Chlorine or other forms—chlorine in the form of chlorine gas or in the form of chlorarine.

Q. Chlorarine is what?

A. Is chlorine, but used with ammonia. Ammonia is introduced first and then chlorine. Copper sulphate is another. That has restricted uses. I think perhaps those examples would be sufficient. There are some others but I would rather not mention them unless the Master insists that I mention more germicides.

The Master: Only answer the question.

Mr. Schaefer: I don't want to embarrass the witness but we all want to find out all the facts. All that I want are all those that are in common use.

A. Those are in common use.

Q. I am not concerned with anything in the experimental stage.

A. Chlorarine and copper sulphate.

Q. Further work is being done to develop more effective germicides?

A. Not to effect more effective germicides but to develop other germicides which might serve special cases, that is better than the present ones.

Q. Is it possible to have an accumulation of slime
161 in a storage vat in a mill?

A. Yes, a storage tank or chest.

Q. What is the storage tank?

A. A storage tank or chest is a tank for the storage of white water or pulp until it is used.

Q. When chlorine is introduced in a storage tank will the chlorine remain there and remain effective for a long time?

A. It wouldn't, no. It is not so used generally.

Q. How would you attack the slime problem there?

A. I should attack the slime problem by dumping that tank, cleaning it out and seeing to it that the raw water supply was well chlorinated because that is a contributing factor and if there was a persistent factor I should say I would use chloramine instead of chlorine at that particular point.

Q. As I get it, Doctor, the problem occurs at various points in the paper mill?

A. Yes.

Q. As the method of solving the problem may differ from one point to another?

A. That is true.

Q. And the means appropriate at one point may not be appropriate or most effective at another point?

162 A. That is true.

Q. We have mentioned white water in connection with sanitary problems in paper mills. What is white water?

A. White water is re-used water, it has been through the process once and is re-used.

Q. Is that a common paper mill practice?

A. It is.

Q. Will you describe the nature of the sanitary problem created by the use of white water?

A. Micro-biologically the re-used white water carries back to the process a considerable number of micro-organisms which are present by virtue of the fact it has been through the process once and has picked up slime and organisms in that way. Where the white water is re-used I advise chemical treatment, to avoid introducing other contamination into the system over that source.

Q. What chemical treatment do you advise, Doctor?

A. I advise chloramine treatment.

Q. Where do you put the chloramine into the system?

A. I put the ammonia in just ahead of the storage tank and that ammonia would only be for a short time, not over a half hour; that would go in; the ammonia would go in directly in the pipeline, directly after the tank 163 and then the chlorine would be introduced further along, say six feet.

Q. Will the use of chlorine or chloramine prevent slime formation?

A. The use of chlorine or chloramine will prevent the formation of slime caused by bacteria. The reason I mentioned copper sulphate a while ago is that we sometimes use copper sulphate because it is most effective against certain fungi.

Q. There are others that are not vulnerable to attack by chlorine or chloramine?

A. That is true.

Q. What is the function of a callender stack of a paper mill?

A. A callender stack of a paper mill, for an ironing function.

Q. That is the function you mentioned?

A. By sprinkling of water, running it over with a hot iron, it makes a gloss and a polish operation.

Q. Where along the line of paper production does that operation take place?

A. That is the final stage in the paper making operation just before the paper is reeled.

Q. Immediately before the paper is reeled?

A. Yes, sir.

Q. That is the term, reeling it on the spindle?

164 A. Yes, sir.

Q. Is there any heat applied to the paper stock after it passes the callender stacks?

A. No.

Q. Is white water ever used in the callender stacks of a paper mill?

A. It may be used in some cases, I presume. My only knowledge concerns mills I have been in, and they don't use white water in callender stacks. Fresh water is the only kind of water in my experience that is used in the callender stacks.

Q. That fresh water would be the ordinary water supply of the mill?

A. That is the water supply that has been filtered or otherwise treated.

Q. Always in your experience the water at the callender stacks—

A. Is fresh water.

Q. Is fresh water?

A. Yes.

Q. Has it always been chemically treated or filtered?

A. In cases.

Q. Just answer that one question.

A. I was trying to think. I have operated in a hundred mills since I first started. It may not need chemical treatment. The city water supply is often used, not for the

165 reason that we treat water in a paper mill, so the chlorination would not be that severe, if it is city water—just to that extent.

Q. Assuming it is not city water?

A. That is the normal supply of the mill is entirely satisfactory from a sanitary standpoint.

Q. Does slime ever accumulate in the water boxes under the callender stacks?

A. There is a slight gelatinous development, I wouldn't call it a typical slime development.

Q. How frequently do the water boxes at the callender stacks need to be treated in order to prevent that accumulation, or can you state that?

A. I would like to differentiate at this point between the boards. At the callender stack the situation varies between those two classes of mills.

Q. I imagine you will have to build up to that, Doctor. Do bacteria and molds grow well in paper stock?

A. They do in ground wet stock which is mechanically ground, stock made by holding the wood against a grindstone.

Q. Yes.

A. That is the material that is very rich in nutrient because it contains all the food materials the tree contains, the sugar, the cellulose, and so forth.

166 Q. Describe the usual grinding?

A. There is the grinding of wood and there is the chemical process mentioned where it is all done by chemical digestion. The chemical pulp is not as fine food, it is not as satisfactory food for micro-organisms as the green wood. There are certain types of fungi that do grow well on chemical pulp but it is not in itself a satisfactory media.

Q. Certain types of what?

A. Fungi.

Q. Suppose that is trailing the concentration in a paper mill, Doctor, toxic bacteria slides were used, would it be possible to determine whether or not they had been used, in the inspection of finished paper products?

A. It would be possible to detect.

Q. What sort of inspection would require to make that differentiation?

A. Chemical analysis would determine the presence of certain toxic materials used in excess.

Q. Short of chemical analysis?

A. You have a wide range of materials, some of which might be detected by appearance or by odor.

Q. By what?

A. By appearance or by odor, but in a general way,

167 the way to answer your question is the chemical analysis is the only reliable method of detecting the presence of a harmful germicide.

The Master: I would like to ask the witness a question:

Q. Is the paraffin more thickly spread on the inside or on the outside of this container?

A. It should be uniform. If there is any difference there is more on the outside.

Q. Friction would remove some of the paraffin, would it not, that is, the friction of this container against other containers?

A. There is a possibility that under certain conditions of chipping or loosening.

Q. If these were kept in an ice box or a container along with a great many other cartons of this sort, wouldn't some of the water get into the pores of this carton?

A. From the outside?

Q. From the outside.

A. I have conducted no experiments on that. In my opinion, no.

Q. Ordinarily as I recall, the milkman has a container with ice in it and the bottles are resting in ice water.

A. Yes.

168 Q. And if he were to put a number of these cartons in a container of that sort I was just wondering whether the water and the friction would not rub off some of the paraffin and the water might go through.

A. These papers are impregnated, it is only a matter of surface coating, but the paraffin is put on very thin in layers, and there are from five to seven layers on these paper containers, so the whole thing is impregnated, so that the inner layer would still be moisture proof and no ice is used, it is not necessary to use ice in distributing milk in these paper containers because of the finer insulation, the milk stays cold longer.

Q. Doesn't some of the paraffin come off just from handling the container?

A. It is possible that you might work a piece loose.

Q. Not a piece, but some little bit, I notice.

A. Yes, an oily feeling.

Q. Yes.

A. Because of a certain amount of oil and it does give an oily feeling just like mineral oil.

Q. Do you think customers might have hesitation about using milk when they see the paraffin coming off?

A. I have not had any indication at all that there 169 has been any complaint about that. Of course, mineral oil is used so much internally, medicinally, and that comes from the same source.

Q. Do you regard that container as being sufficiently strong to withstand considerable pressure from the top?

A. Yes, I do. I have conducted no strength test by any approved apparatus but I have subjected it to a good many tests and I am surprised at its rigidity and strength.

Q. How does it happen that you have been so active in this particular subject?

A. I was requested to investigate.

Q. What?

A. I was requested to investigate this subject under an investigation authorized by the Department of Health of New York City and of New York State, and the paper container entered New York and received consumer approval and the state health department wanted information on that type of container and they turned to Dr. Breed, who is head of the department and Dr. Breed turned to me for the necessary information and he requested me to go to Geneva to the laboratory to take charge of this investigation.

Q. What accounts for your continued interest in this subject?

A. As the investigation proceeds, many ramifications have developed and it is not as simple a problem as 170 has been brought out here.

Q. To get down to the subject I have in mind, you were asked by Mr. Gariepy whether you were being paid for coming in here?

A. Yes.

Q. I was trying to ascertain just what it meant. Somebody is paying for your time now?

A. I am employed by Cornell University and through Dr. Breed the necessary travel expenses and necessary invoices are sent directly to the treasurer of Cornell University covering expenses. I assume that the expenses of my trip here will be paid some way or other.

Q. I hope so. I was just wondering whether there was some connection between you; I just wanted to get it negative in the record if that is a fact that you had no connection whatever with any paper mill organization or with anybody else that might be interested financially in getting these containers adopted anywhere.

A. The only connection I have is that container manufacturers are interested of course in research, they are interested in all industrial plants these days, they are inter-

ested in research and it is part of the industrial program, being interested in research. The manufacturers of paper containers have started a fund at Cornell University
171 for research to be conducted under the direction of Dr. Breed. It is not being done for any one manufacturer because in view of the fact we are working in the interest of the consumer, all of these containers a consumer might find at the store should be included, and we have encouraged all manufacturers who are producing containers for food, if interested in higher standards, and of course they are, to participate in an investigation.

Q. How have you been able to open this container?

A. This is a shield that protects the pouring lip.

Q. You don't tear the top of it off?

A. No. May I open this?

Mr. Rall: Don't open that one. That is in evidence. We will bring some over tomorrow.

The Master: Q. You open that flap?

A. Yes.

Mr. Rall: Tear it all the way, now, that you have torn it.

The Master: Do you have to be an expert to open that?

The Witness: No, sir. That is an exhibit, Master.

The Master: Is there anything more for today?

Mr. Gariepy: While the Master has asked the witness these pertinent questions which apparently will reflect upon his credibility, I should follow that up.

172 The Master: Yes.

Mr. Gariepy: Q. Do you have any agreement with the Fieldcrest Dairies, plaintiff, or with anybody in connection with the plaintiff, concerning your testimony here today and compensation therefor?

A. None whatsoever.

Q. Have you had any conversation with me or anybody for and on behalf of the plaintiff concerning your services here today?

A. No, sir.

Q. Have you any interest in this litigation with regard to the outcome, favorable or unfavorable or with the City, with regard to money or otherwise?

A. No, sir.

Q. You are here for and on behalf of the consumer?

A. That is true.

Q. Your experience and your research work are for and on behalf of the consumer?

A. Yes, sir.

Q. And the New York experimental station in Geneva?

A. Yes, sir.

Q. You are giving this your time without any build-up concerning pay?

A. Yes.

Mr. Schaefer: You are not being paid by the city of Chicago, are you?

173 A. No, sir.

Q. The situation is this, Doctor, that the milk container people contribute to a research fund at Cornell University and from that your salary is paid?

A. That is right.

Q. And your activities are—

Mr. Gariepy: If the City of Chicago wants you to testify in this matter and asks you, you will be glad to come here and testify?

The Witness: I will be very glad to come here and testify.

Mr. Schaefer: Q. Is the Ex-Cell-O Corporation a contributor to your fund?

A. Yes.

Q. Along with others?

A. Along with others, yes, one of the contributors. May I answer your question, you mentioned pulp and paper mills. I am not employed by any pulp and paper mills and I have no connection with any pulp and paper mills, and when I go to visit paper and pulp mills I receive my expenses, that is, my traveling expenses.

The Master: Q. You said you operated a hundred mills.

A. I used to but of course I worked for the International Paper Company and that was before I was employed

174 by Cornell University and the International Paper Company have many mills from Newfoundland to Bastrop, Louisiana, and it amounted to a good many trips to mills.

Mr. Gariepy: Mr. Schaefer, how long will you take with this man tomorrow?

Mr. Schaefer: I think we will have a pretty full session. I think we can wind up in the morning but I am not sure.

(Discussion off the record.)

The Master: Further cross-examination of this witness will be resumed at 10 o'clock tomorrow morning.

(Thereupon the further hearing in the within cause was continued until 10 o'clock a. m., June 1, 1939.)

176 • • (Caption—.....) • •

Thursday, June 1, 1939.
10 o'clock a. m.

Met, pursuant to adjournment.

Present:

Frederick A. Gariepy,
Owen Rall, of counsel, on behalf of plaintiff;

Barnett Hodes, Corporation Counsel,
City of Chicago, by Walter V. Schaefer and Charles P. Horan, Assistants Corporation Counsel, on behalf of defendants.

177 The Master: You may proceed.

Mr. Schaefer: If the Master please, on the question of the relevancy of certain testimony, as to the use in other municipalities, which came up yesterday, we submitted briefs to Judge Sullivan in the two cases before him with regard to the relevancy of some allegations in the pleadings, and I thought if those would be helpful to you we would be glad to give them to you.

The Master: I would be glad to look at them.

Mr. Schaefer: Briefs were submitted on behalf of the Ex-Cell-O Corporation and the American Can Company.

The Master: Judge Sullivan did not decide that?

Mr. Schaefer: There has been no ruling yet, but I thought that that might be helpful. But they do discuss other questions there which are not pertinent here.

The Master: I will be glad to get that.

Mr. Gariepy: In view of the fact I was not a party to those motions to strike or in that litigation, I will be glad to answer his briefs on that point that he is going to give the Master.

The Master: Yes.

Mr. Schaefer: Off the record.

(Discussion had off the record.)

178 Mr. Schaefer: Now, one other matter before we begin. There have been reserved rulings on two questions. First, the relevancy of the testimony as to the use of paper containers in other municipalities, and, second, as to the relevancy of counts, bacterial counts, and the condition of the glass bottle in other municipalities.

The Master: Relevancy of what? Counts?

Mr. Schaefer: Yes, counts. The witness testified as to the results of certain tests he made with respect to glass bottles in municipalities other than the City of Chicago. I am a little embarrassed here this morning, because I may touch on both of those points, and if the ruling be in favor of the admissibility I would want to cross-examine. If the ruling is against the admissibility, I am willing to let it stop.

The Master: I am at a little disadvantage here. In the first place, we are hearing depositions here, in which event I have no very great discretion in the disposition of objections, that is, I have to let everything go in, and, then, irrespective of the fact that we are taking depositions, the
179 Master always tries, or should try to make the record be in such shape that if the Court should disagree with him he will not have to send the case back for the further taking of testimony. Of course, if a particular line of testimony will unduly encumber the record, the Master may decide the question and eliminate all of that testimony, so that the record shall not be so encumbered, but thus far I have not seen any very great amount of testimony on these debatable subjects, so I have let them go in. I have made certain observations and rulings, at the same time permitting the evidence to come in the record for whatever use the Court may wish to make of it.

Now, on those bottles and containers, I just thought it would be all right to take the testimony and then go ahead with the cross-examination, without prejudice to your objection.

Mr. Schaefer: All right.

Mr. Gariepy: I was going to suggest that we will stipulate that he may do that, without prejudice.

The Master: Yes. Now, as to that other question you raised yesterday morning, with reference to this joint experiment proposition, I was just wondering whether you were going to insist on that, in view of the opposition
180 of the other party. It seems to me that the purpose of the whole arrangement was to save some time, if possible, and the basis for the whole thing was a voluntary agreement of both sides in an endeavor to save time and expense.

Mr. Schaefer: Yes, and to answer certain questions.

The Master: Now, they say, after consultation with their experts, they have decided that it would take a whole lot

longer than they originally contemplated and that they have the results of experiments which, according to them, were conducted under circumstances and conditions closely approximating those which may be found in a dairy, and they say also if there are any differences they can be brought out on cross-examination, and the differences may go to the weight of the testimony or their evidence of the experiments.

I was wondering whether, in view of their opposition at this time, if you are going to insist very strongly on carrying out the agreement. It seems to me the whole thing was done originally by agreement in order to save time. Now one side says the procedure outlined, according to his views, will not effect the purpose and achieve the end that was in contemplation. Then the thing to do, perhaps, is to
181 just forget about it, particularly in view of the fact that you did not have any very conclusive effect attached to the experiments, that both sides were to be at full liberty to cross-examine to their heart's content.

Mr. Schaefer: Of course, realistically the effect of those experiments would be pretty important, it seems to me. That is, if the results of these experiments are in favor of the container, while we do not stipulate that it would affect the results of the lawsuit, I am under no illusions but that it would.

In the second place, we did this by agreement, at the suggestion of counsel for plaintiff. My original effort was to secure an order, the entry of an order, at a pre-trial conference, which would direct that these experiments be performed, and when I suggested the second time that that be done Mr. Gariepy said that he thought we could work that out by agreement, which seemed perfectly rational to me.

So we proceeded that way, instead of appearing before Judge Woodward, at a pre-trial conference, which was my original thought. Then I have been instructed, rather emphatically, by the Board of Health, who are defendants
182 in both of these cases, to attempt to have these tests performed in this manner. I was not impressed by any of the arguments—and I tried to look at it objectively, too—I was not impressed by any of the arguments against the conduct of these experiments. One thing was suggested, the substitution of other bacteria, and we are perfectly agreeable to that. That is a matter that can be readily

worked out. As to the time element, we just disagree with that.

The Master: What is that?

Mr. Schaefer: We disagree violently with the suggestion as to the amount of time necessary to conduct the experiments.

Mr. Rall: If the Master please, I understand some reference will be made to the procedures that the city has requested for these tests in the redirect examination of this witness, and it would be my suggestion that after the testimony has been concluded counsel and an expert on each side confer with your Honor. Certainly we want the city to have every opportunity, and if it can be done without a duplication of too much expense and without too much delay, we want to give the city anything that it wants within reason.

183 I am not at all sure—I was not in the city at the time of the conference last Monday, which broke up—I am not at all sure that an agreement cannot be reached. You understand that Mr. Gariepy did not get his objections to these procedures out of thin air. It was not at all a matter for the lawyers to decide. He submitted them to the experts, who were to make the tests, and they simply said that it was useless, and they would not be a party to it, and to that extent Mr. Gariepy's hands were tied. But Professor Tanner of the University of Illinois is here. He is an associate of Dr. Prucha, who is one of the men named, and I think he has some ideas on it, and after the testimony I suggest such a conference.

The Master: We can take that up later.

Mr. Schaefer: How about this as a suggestion; that we get the men who were to perform the tests, get Prucha, get Day and get Bailey, and let them sit down with you? Counsel do not need to be present. Let them work it out with you.

The Master: We can take that up later. Let us get through with this witness.

184 JOHN RAYMOND SANBORN, a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Schaefer (Continued).

Q. Doctor, in order adequately to determine the sanitary qualities of paper board used in paper containers for milk, how many samples per ton of paper do you think should be taken and disintegrated and examined bacteriologically?

A. A suitable sample should be taken from each run, each mill run of that paper board.

Q. What do you mean by each mill run, Doctor?

A. A suitable sample from each production period.

Q. How long is a production period?

A. It varies in length of time.

Q. Will you explain that? I do not understand what you mean, Doctor.

A. The run of a product by a mill depends upon the size of its order.

Q. The size of its order?

A. The size of the order that was given.

Q. What you mean, then, is that these mills that produce board for paper containers also produce paper 185 for other uses?

A. Yes.

Q. Is that right?

A. Yes.

Q. And the amount of time that they devote to producing paper or board for paper containers and to producing paper for other purposes varies with the demand for the various products that they produce?

A. Yes.

Q. Now, a run may last how long?

A. A run may last a few hours or it may last all day.

Q. May it last more than a day?

A. A run of paper, generally speaking, may last several days.

Q. Of a particular type?

A. Yes. The average time is about a day.

Q. That is, sometimes it is more than a day and sometimes it is a matter of a few hours, and it may run up to several days?

A. Yes.

Q. You do not believe, then, that the number of samples that should be taken should depend upon the quantity of paper?

A. Yes, it should depend upon the quantity of paper. I mentioned suitable sample or suitable samples.

Q. I thought you said one sample from each run.

186 A. One suitable sample.

Q. What do you mean by a suitable sample?

A. A sample that would be representative of the run.

Q. What would that be in physical terms? Describe such a sample.

A. If it was a short run of paper board, it is possible that a single sample would be adequate. On the other hand, it might be necessary to have three or more samples, depending upon local conditions.

Q. How many samples per ton should there be, in your opinion, Doctor?

A. That matter is usually determined by the length of the run. Under average conditions and in an average length of time, three samples are submitted, one at the early part of the run, one at the middle of the run and one at the end of the run.

Q. That is regardless of the amount of paper produced in volume?

A. Yes.

Q. Is that proper, in your opinion?

A. Yes, that is getting representative and satisfactory results.

Q. That is, in your opinion the number of samples should not bear a direct relation to the volume of paper produced by the mill?

A. It may not bear a direct relation.

187 Q. No, I want your opinion, as to whether or not it should.

A. Yes.

Mr. Schaefer: Will you read the question again, please, Mr. Reporter?

(Mr. Schaefer's question was read by the reporter as above recorded.)

Mr. Schaefer: Q. You mean the number of samples should bear a direct relation to the quantity of paper produced?

A. You ask for a definite answer, under all conditions possible, and the question cannot be answered as no.

Q. I want your opinion as an expert, Doctor. You know more about this than the rest of us do.

A. Well, in my experience I have found that it is adequate to ignore the size of the run or the quantity of paper, but I can see in a general way that it might be necessary to take that fact into consideration, so that the answer must be yes.

Q. Will you explain what you mean when you say that you can see in a general way why that would be necessary, Doctor?

A. The answer to that question involves a knowledeg of mill policies and mill operation, and an intimate knowl-
188 edge of such facts, which are not usually available to the layman, would determine the need for the recognition of that factor.

Q. That is, when you say that samples which are not based on the quantity of paper produced are adequate, you mean in view of your knoweldge of conditions and your frequent inspection of these mills and so on?

A. Yes.

Q. From a sanitary or public health point of view, would you think it advisable to rely alone upon board disintegration tests as determining the sanitary quality of the paper board?

A. Board disintegration tests can be an index to the sanitary condition of manufacture of the mill.

Q. Yes, I can see that, but what I am asking is whether you believe that that index alone may safely be relied upon.

A. In the case of the board in question?

Q. No, in the case of paper board generally.

Mr. Gariepy: I am going to object here.

The Master: Read that question.

(The record was read as above recorded.)

Mr. Gariepy: That is where my objection comes in. We are going far afield in regard to board generally. We
189 are only trying the board in question here, the Pure-Pak container board, from prime pulp. It may be all right for counsel to obtain all the information that he can from the Doctor as a matter of procedure, but I don't think we should take the time up here with general topics.

The Master: I will overrule the objection. He may answer.

The Witness: A. No.

Mr. Schaefer: Now, the question was what?

The Master: Read the question.

(The record was again read as above recorded.)

Mr. Schaefer: Q. Now, how is it possible to know what products a paper mill is producing at a given time, without observing the operation of the mill?

Mr. Gariepy: I make the same objection, Master. It should apply to the mill in question, the Cherry River, and not any other mill.

The Master: You can ask him those questions on redirect, as to the difference between this mill and any other mill.

Mr. Schaefer: This question I am perfectly willing to have confined to the Cherry River mill.

The Master: Read the question to the witness, please.

190 (The question was read as above recorded.)

The Witness: A. It is impossible to know that without having a knowledge of the mill schedule of runs.

Mr. Schaefer: Q. Whether or not the mill complies with that schedule? By schedule you mean what the mill has produced?

A. Yes.

Q. You do not mean a projected schedule in the future?

A. No. A schedule for the immediate future, what it proposes to make during the next few days.

Q. If you project the schedule into the future, it is necessary to know not only the schedule, but also to know that that schedule is being conformed to, is it not?

A. Yes.

Q. How many paper mills have bacteriological laboratories?

Mr. Gariepy: I object to that, Master, for the same reason as before given.

The Master: Your objection may stand to all this line of examination as to other mills and as to questions which are broad enough to include other mills, without being

191 repeated.

Mr. Gariepy: All right.

The Master: Answer the question.

The Witness: A. Here, again, you want to include all mills that I know of?

Mr. Schaefer: Q. All mills that you know of. You have

a pretty broad knowledge of them, don't you, in the northeastern part of the country, any way?

A. I can answer that question in a general way, as far as my knowledge goes.

Q. Yes.

A. I know fourteen mills that have some sort of bacteriological control in the mill laboratory.

Q. Are those fully equipped bacteriological laboratories, do you think?

A. They are not all fully equipped bacteriological laboratories.

Q. How many of the mills that manufacture board for paper milk containers manufacture that product exclusively?

A. I know of no mill that manufactures that product exclusively.

Q. Is it not more expensive for a mill to produce paper of a high sanitary quality than to produce paper of a low sanitary quality?

Mr. Gariepy: I don't see any materiality to that, Master. We are just wasting time and money here.

192 The Master: He is dealing here with the general proposition, not particularly with this particular manufacturer's container, but he is dealing with an ordinance, and he has to consider the broad aspect of this situation, as to whether somebody else may come in with a container of this sort, whether the ordinance should be held to apply to everybody who manufactures containers. I think he is entitled to ask these questions, if for no other reason than to ascertain the knowledge of the witness on the general subject of paper making.

Mr. Gariepy: But whether it is profitable or unprofitable for them to make this paper of the better grade I do not think is material, especially with respect to this ordinance, or any other ordinance.

The Master: Well, whether it will give them a chance to escape some of these requirements of sanitation, whether particular paper mills might be permitted to go ahead and give you an inferior grade, because it would be economical for them to do it—I will agree with you it may not be very material here, but it is just part of the general subject. I will let him answer.

The Witness: May I have the question again?

(The question was read as above recorded.)

193 The Witness: A. In my opinion, it is not more expensive to produce a paper of high sanitary quality.

Mr. Schaefer: Q. Is it more expensive to use virgin stock than to use secondary stock?

A. It is more expensive to use prime pulp.

Q. Can bactericide be applied to the water supply of a mill without expense?

A. No.

Q. Can the operation you described of cleaning a mill system to eliminate accumulations of slime be performed without expense?

A. No.

Q. Is the maintenance of a bacteriological laboratory a factor of importance in the sanitary quality of the output of a mill?

A. May I have that question again?

(Mr. Schaefer's last question was read by the reporter as above recorded.)

Mr. Schaefer: Q. Strike out the words "of importance" and just say "factor."

A. Yes.

Q. Can such a laboratory be maintained without expense?

A. No.

Q. Is copper pipe in a mill plant conductive to the production of high quality paper, from a sanitary point of view, than is the use of iron pipe?

194 A. It is a factor that is conducive to better sanitation.

Q. Is copper pipe more expensive than iron pipe?

A. Yes.

Q. Now, will you explain what you meant, Doctor, when you said that it was not more expensive for a paper mill to produce a paper of a high sanitary standard than a paper of a low sanitary standard?

Mr. Gariepy: I don't see any materiality to that, Master. He is just going on ad infinitum, it seems to me, into these ramifications.

The Master: I have already ruled on that.

The Witness: A. The reason for my answer is that these precautions have been utilized for many years without any direct sanitary objective. They have been used for—

Mr. Schaefer: Q. Any direct what, Doctor?

A. Sanitary objective.

Q. Sanitary objective?

A. They were used for economic reasons. A mill cannot operate economically without utilizing bactericidal control. That is part of the mill operation system. That expense has been borne through the years as a necessary prerequisite for continuing satisfactory production.

195 Q. Now, Doctor, I want to call your attention to a statement which, according to this publication, was published by the New York Agricultural Experiment Station at Geneva, New York, and reprinted from the January, 1938, issue of the Journal of Milk Technology. This statement appears:

"Fear of increased operative costs and hesitancy to make changes in the long established practices intensify the opposition to improved sanitary methods on the part of some pulp and paper mills."

Was that a sound statement at the time it was made, Doctor?

A. Yes.

Q. Is it a sound statement now?

A. Yes. Master, I had not quite finished my answer to the previous question.

Q. Go ahead, Doctor.

A. It would have dealt with this particular matter.

Q. Go ahead.

A. I have said that micro-biological control has been an economic necessity through the years, not for sanitary reasons, but for operative reasons. Naturally, some mills recognize this fact much more readily and much more
196 completely than others. Some mills may even refuse to recognize it until forced to, because of a sudden cessation of activities, through no planning or wish of their own. So there has been and are a number of mills—and of course there are hundreds in the country—that are trying to get along—and I am speaking now generally of all mills—without microbiological control. They learn, to their sorrow, eventually and periodically, that they must stop their activities and stop their present procedures and adopt some sort of sanitary program. But there are many mills, to my knowledge, that have adopted such a sanitary program for continuous use.

For economic reasons, all mills should adopt microbiological control, not necessarily for sanitary reasons. So when we come to the board to be used or the paper products to be used, for food uses, medical uses or other uses, they

can achieve, without extra cost, sanitary benefits, as well as economic benefits, by following such suggestions, for example, as I might make, which would involve merely a slight change in the method of application, without meaning the purpose of any new equipment or new material.

Q. Doctor, is not what you are saying merely this:
197 That the amount of increased cost and whether or not there is any increased cost depends upon the condition of the mill at the time you start considering whether or not the cost is increased?

A. Yes.

Q. Now, Doctor, is there anything which would prevent mills not presently making paper board for milk containers from manufacturing paper board for that purpose?

A. Yes.

Q. And what would prevent that?

A. There are many factors that may prevent a mill from producing that grade of paper board. It is difficult to enumerate all of them.

Q. Will you enumerate the most important ones?

A. The location of the mill.

Q. Now, let us take them one by one. How will the location of the mill make it impossible for a paper mill to produce paper board for milk containers?

A. It would have to be near a source of supply of raw materials and a suitable water supply.

Q. Most mills are near a source of supply of raw materials, are they not?

A. That picture is changing very rapidly. They originally were.

198 Q. Whether or not they are near a source of raw material supply influences the cost to them of producing the product, doesn't it?

A. There is one other factor. Their ability—

Q. Well, wait, Doctor. Let us finish that first one. Those are the only influences, aren't they?

A. Not the only influences.

Q. What others?

A. Their ability to obtain raw material of suitable sanitary condition.

Q. Now, wait. You are introducing a factor that I have not introduced, suitable sanitary condition.

A. Now, may I have the question again, please?

Q. Let me ask the question again. Is there anything to prevent mills not presently making paper board for milk

containers from manufacturing paper board for that purpose?

Mr. Gariepy: Master, how is that germane to the subject matter of inquiry here? Are not we going into a realm of speculation as to what those mills may do or may not do?

The Master: He may be using this as a preface to an attack on your particular mill, trying to find out what the general situation is, and then to see whether that general situation obtains at your mill.

Mr. Gariepy: I don't want to be obstreperous here
199 by objecting unnecessarily, but it seems that we are going far afield from this paper board question.

The Master: I think on cross-examination he is allowed a certain liberality. Go ahead. Have you the question?

The Witness: No.

The Master: Read the question.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: A. Yes.

Mr. Schaefer: Q. All right, now, you have mentioned one thing, and that was the location of the mill with respect to its supply of raw mterials, and that influences the cost, but does not physically prevent the mill from manufacturing paper containers, is that right?

A. It influences the cost, yes.

Q. And at an increased cost, assuming that it has an unfavorable economic location, a mill could have raw materials?

A. Yes.

Q. Now, what are the other factors?

A. The nature of the mill itself.

Q. What do you mean by that?

A. I mean its equipment and type of—

200 Q. Now, wait. Let us have one thing at a time.

A. They are all linked together.

Q. Let us take the nature of the equipment. What peculiar equipment is required to produce paper board for paper containers that is not required to produce paper board for other uses?

A. Paper board for milk containers—and we are referring now, I believe, to one container, are we not?

Q. No, we are not. We are talking generally now, Doctor. We are talking about paper mills.

A. Paper board for milk containers contains bleached

pulp. A bleaching plant might not and would not be available or part of the equipment of other classes of mills.

Q. Is it your experience that most mills which do not produce paper containers do not have bleaching plants available?

A. Let me have the question again, please.

(The question was read as above recorded.)

The Witness: A. No.

Mr. Schaefer: Q. That is, most mills which are not producing paper containers have bleaching plants available?

A. Might it not help, to sort of classify in a general
201 way mills, so we can limit it a little bit?

Q. Let us enumerate the factors first.

A. For example, I would like to eliminate newsprint paper mills and other mills, such as tissue mills. Tissue mills do not have bleaching plants. So we can save time by limiting the discussion to certain groups of mills or certain classes of mills.

Q. All right. That is fine. Why cannot a tissue mill produce board for paper containers?

A. Because it has a different kind of a machine that is designed for making thin paper, such as tissue, and cannot make a paper board.

Q. Without changing the machinery?

A. Without changing the machinery or changing the mill, yes.

Q. And the same thing is true of mills manufacturing paper newsprint?

A. That is right.

Q. All right, we will eliminate those. Now, will you answer the question with respect to that bleaching equipment, or do you want to change your answer, eliminating those classes of mills?

A. No.

Q. The answer remains, eliminating those two classes of mills?

202 A. Yes, it remains.

Q. Now, what other factors, Doctor, would prevent a paper mill from manufacturing board?

A. That second one, as I understand it, was equipment and apparatus and machines and all of the devices used.

Q. Now we have enumerated two types of mills whose machinery is unsuited. Are there other types of mills whose machinery is unsuited?

A. There are other types of mills whose machinery is unsuited as they are manufacturing paper at present, and it would mean a new layout. It would mean new and different apparatus.

Q. What kind of new and different apparatus, Doctor?

A. Apparatus for the handling of the pulp, for refining it, for example.

Q. How is it refined different in these mills that you are now referring to from that refined by a mill producing paper board?

A. That is entirely up to the mill system, the policy of the mill. There are many ways to manufacture pulp, and I doubt if there are many paper makers that know all of them or have used all of them. The setups and methods of handling vary widely from mill to mill and each mill may have its own pet way of manufacturing pulp and paper.

203 Q. They can all produce paper board by all of these various methods?

A. Yes, it is possible to, provided they have the right kind of machine, which is a special machine for producing that grade of paper.

Q. For producing that grade of paper?

A. Container board.

Q. What do you mean by that? I am not talking about grades of paper, Doctor. I am talking about paper board.

A. Which is one grade of paper, and that is the grade I had reference to. It is made on one kind of paper machine, called a cylinder machine.

Q. I see. Do most of the paper mills, in your experience, have that kind of a machine?

A. In the United States most of the board mills have a cylinder machine.

Q. All right now, what are the other factors which you had in mind, Doctor?

A. One other factor is the business policy of the mill. By that I mean the types of paper manufactured in relation to the demand, the type of business that the mill is designed for. It is designed for a certain type of business. It will not go into any other business for any other kind of

204 paper without perhaps, building another mill somewhere.

Q. Or unless the demand shifts, is that right?

A. It would mean the revamping of the whole setup in any case.

Q. Why?

A. Because the way of handling waste materials, for example, which might go into another class of paper board, is so different from the manner of handling prime stock for milk container board, say, that the change would necessitate a considerable amount of alteration in the physical equipment and procedure.

Q. Let me put it this way: What physical fact is there in the operation of a paper mill that would prevent it from producing a board which is shaped like that board? (Handing instrument to the witness.)

The Master: Referring to exhibit what?

Mr. Schaefer: Referring to Plaintiff's Exhibit 3.

Mr. Gariepy: If the Master please, we have a man here who operates paper mills and knows about the economic factors obtaining in paper mills. The Doctor was put on as a bacteriologist concerning paper and particularly concerning the paper in question here. We obtained him and put him on the stand and questioned him for such purpose
205 and not as a man operating a mill.

The Master: Do you contend that he is unable to answer these questions?

Mr. Gariepy: I contend it is improper cross-examination. We did not ask him about operating paper mills on direct examination, and counsel ought to be confined to the direct. If he wants to ask a man practical questions about the operation of paper mills we will put one on and he can ask him questions for a week. He will tell him about operating mills and converting them and so on. I think the Doctor can take care of himself. I don't care.

Mr. Schaefer:: I think he is qualified.

The Master: Do you consider yourself capable of answering these questions, Dr. Sanborn?

The Witness: Yes.

The Master: Go ahead.

Mr. Schaefer: Will you read my last question?

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: A. The raw materials available at a mill might not permit it to make a board of this kind.

Mr. Schaefer: Q. A board shaped like that?

Mr. Gariepy: The shape does not enter into it, does it?

206 Mr. Schaefer: The shape is what I asked him about.

Mr. Gariepy: That is a converting mill you are talking about, not a paper mill.

The Master: Let the witness talk about the shape.

The Witness: A. Your question I did not understand. You mean as applied to the shape of this board?

Mr. Schaefer: Q. Yes.

A. Not as to its other physical properties, such as folding, bending and strength?

Q. Yesterday you were shown a roll of paper.

A. Yes.

Q. Do you remember what that was?

A. I remember the roll, yes.

Q. What is there in the physical condition of paper mill plants, generally, which would make it impossible for them to produce a roll of paper similar to that roll?

A. Similar in what way?

Q. Similar in outward appearance.

The Master: Size, color, thickness, tensile strength.

Mr. Schaefer: Tensile strength, no.

The Witness: A. Aside from the economic factors, there might not be anything that would prevent them from making it.

Mr. Schaefer: Q. Now, Doctor, if the use of broke or trim was prohibited in the making of board for paper
207 containers and the use of lap stock only was permitted, would the cost of producing the paper board be increased?

A. Not appreciably.

Q. It would be increased?

A. It would be very hard to measure any increase. It might be infinitesimal in amount. There might be a little economic loss, but it would be very hard to measure it in dollars and cents. In fact, there might be no economic loss in the long run.

Q. You mean they might use the broke and trim in some other kind of manufacture?

A. They might use the broke and trim in some other kind of manufacture, that might be sold to other outside mills.

Q. But if the broke or trim were not used at all, it would substantially increase the cost?

A. No, not substantially increase the cost.

Q. Even if it were not used at all?

A. No.

Q. Have manufacturers of paper recently shown an

increased interest in the sanitary quality of their product?

A. Yes.

Mr. Gariepy: I object to that, Master. Whether they have or not is immaterial.

208 The Master: I will let him answer.

Mr. Schaefer: Q. When did that increase in interest first begin to manifest itself?

A. In the case of certain mills there has been an interest in that subject from the early history of the mills. In the other cases there has been increased interest since it was known that the public health authorities were interested or that research agencies were interested.

Q. And that increased interest, roughly, coincided with the beginning of your work at the experimental station at Geneva?

A. Yes.

Q. In fact, a manifestation of their interest was the establishment of the foundation at Cornell University, I suppose?

A. Yes.

Q. Are they making progress along the line of increased sanitary products?

A. Yes.

The Master: Is who making progress?

Mr. Schaefer: Q. Are the manufacturers of paper board making progress?

A. Yes.

Q. Is that a continuing progress, would you say?

A. Yes.

209 Q. Do you expect that progress to continue in the future?

A. Yes.

Q. Do you know whether or not any work is being done by manufacturers of paper board looking toward the production of a paper milk container which is capable of being sterilized immediately before it is filled with milk?

Mr. Gariepy: Object to that question, Master. It assumes that the present container is not sterilized before it is filled with milk, and the Doctor has already answered that the containers without the paraffin are considered essentially sterile.

The Master: We will be able to tell from this testimony what he has testified. Read the question.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: A. No, to paper board manufacturers. Research work is in progress by manufacturers of containers which might be construed as having that as an objective.

Mr. Schaefer: Q. Will you describe what the work is that you have in mind, Doctor?

A. Being a research work in progress and not under my direction or knowledge, I do not feel competent to discuss it.

210 Q. You do not know what stage that development has reached?

A. No.

Q. Of your own knowledge?

A. No.

Q. In your opinion, in the interest of public health, should standards be formulated and adopted governing the production of paper board for use in paper milk containers and governing also the subsequent processing and handling of that paper board until the container is filled with milk?

Mr. Gariepy: I object, Master. It assumes that there are no standards existing at the present time.

The Master: The witness may answer and you can bring it out on redirect. Go ahead.

The Witness: A. Yes.

Mr. Schaefer: Q. By whom should those standards be formulated and adopted, in your opinion, Doctor, be formulated, adopted and enforced?

A. Do you refer to sanitary standards alone?

Q. I am referring to the standards that you think of as standards governing the production.

A. Public health?

Q. From a public health point of view.

A. Based on research work, information is obtained which will enable public health authorities to determine on what they consider satisfactory standards.

211 Q. That is, in your opinion, those standards should be formulated and adopted by public health authorities based upon—

A. Based upon adequate research data.

Q. (Continuing.) —based upon adequate research data, is that right?

A. Yes.

Q. Has the City of New York formulated and adopted such standards?

A. No. New York City has as yet no established regulations, as far as I know.

Q. Has the City of Philadelphia, as far as you know?

A. I know of no standards there.

Q. Your knowledge of New York goes up to what date, Doctor?

A. It goes up to within one week.

Q. And in the City of Philadelphia have such standards been formulated?

A. I have no knowledge of any such standards in Philadelphia.

Q. That appears elsewhere in this record. Now, in what cities have such standards been formulated and adopted?

A. There is a standard for the City of Baltimore.

Q. And what others, Doctor?

A. There is a standard set in the regulations adopted by the City of Reading, Pennsylvania.

Q. When were those adopted, do you know?

212 A. I have them here. I can present them, if you wish to look at them.

Q. You can refer to them, if you see fit. I would like to get that.

213 A. Excuse me just a minute. December 1, 1937, is the date in here on the Reading.

Q. What other cities, Doctor?

Mr. Gariepy: Let him get it. He is getting it.

A. I have the Baltimore regulation and it has been mimeographed. That was February 25, 1937.

Mr. Schaefer: Q. Baltimore, it was adopted February 25, 1937, and the effective date the same date.

Mr. Gariepy: Let the record show the witness is examining a document purporting to be an ordinance.

Mr. Schaefer: No. I am just asking what he knows as to the date.

Mr. Gariepy: Let the record show exactly what is transpiring. He is handing him a printed copy of the mimeographed ordinance and a copy of the Baltimore Health Department Ordinance.

The Master: What is the purpose?

Mr. Gariepy: He is not talking exactly about dates. That is the purpose of it, Master.

The Master: Go ahead.

Mr. Schaefer: Q. Now, what other cities have?

A. I know of no other city that has adopted regulation.

Q. Have you made an effort to ascertain regulation?

A. Yes.

Q. In your opinion, are the Baltimore regulations
214 satisfactory?

A. No.

Q. In your opinion, are the Reading regulations satisfactory? If you want to look at this Reading ordinance, maybe this will help you.

A. No, I don't care to look at it. It is all right, unless I have to tell why.

Q. I am not going to ask you why.

A. Yes.

Q. Was the Reading regulation satisfactory, in your opinion?

A. Barring minor differences of opinion, concerning the importance of certain factors, the Reading regulations are generally satisfactory as they stand.

Q. Go ahead, Doctor. This is an explanation that I think is important. I don't want to embarrass you, Doctor, by asking you why in your opinion they are not satisfactory. I don't think it is particularly material why you think so.

A. No.

Q. But I want to know whether you think they are satisfactory now. You have said that the Baltimore regulations were not, in your opinion.

A. Yes.

Q. And the Reading were.

A. Yes.

215 Q. And I have in mind a particular factor here which you probably also have in mind which is the same in both regulations. Let me ask you the question again: In your opinion, are the regulations adopted by the City of Reading—

A. Reading, yes.

Q. —satisfactory.

A. Might I look at it now, please?

Q. Yes. (Handing document to the witness.)

A. There is probably a difference of opinion as to the definition of the word satisfactory, and as I gather it the definition in counsel's mind, I would say, the answer should be no.

Q. That is, in your opinion these regulations are not satisfactory?

A. Not entirely satisfactory.

Q. And those are the only two cities that you know of that have formulated and adopted regulations?

A. Yes, sir.

Q. Doctor, you testified with respect to certain bacteriological counts which you made on glass bottles, you testified to that yesterday. Were those made on Chicago bottles?

A. No.

Q. Will you describe those tests, please, Doctor?

216 First, when were they made?

A. I can best answer that question by stating that in the experience of a trained food bacteriologist, it becomes his interest and his duty to keep in close touch with the sanitary condition of containers including glass bottles and that periodically he examines them and reviews the literature and all available data so that he is well informed on the trend of investigations and the condition of counts from year to year.

Q. Yes, I can see that, Doctor. Now, when did you make your last periodical count on glass bottles?

A. An examination was made of glass bottles in 1938.

Q. By you?

A. Under my direction, yes.

Q. By whom?

A. In my laboratory.

Q. By whom?

A. It was probably done partly by myself and partly by my assistants.

Q. Will you describe the analysis that you made of that.

A. The only analysis made at that time was the rinse test.

Q. All right. Will you describe how you conducted that rinse test.

A. The rinse test is performed according to the standard methods, the lastest standard methods of the American Public Health Association, employing a rinse with

217 ten cubic centimeters of sterile water and plating out according to bacteriological content.

Q. Shaking the bottle?

A. According to standard methods, and a plating by bacteriological content or methods in the preparation for

this experiment, sterile bottle caps are used in conveying and preparing the bottle for transportation to the laboratory in case it is done at the laboratory at a distance from the dairy.

Q. How many bottles did you test by that method at that last test?

A. The number of bottles rinsed is not clear to me now because of the lapse of time.

Q. More than a hundred?

A. No.

Q. More than ten? I just want your best recollection, Doctor.

A. I was trying to recollect the exact number, but I am not sure. It may have been between 20 and 30.

Q. Now, how were those bottles treated before they came to you for inspection, before they left the dairy?

A. They had gone through the usual process of soaking and washing and chlorine treatment.

Q. Where did the bottles come from?

A. They were bottles directly from the dairy going through the usual process.

218 Q. What dairy?

A. I prefer not to answer concerning the identity of milk plants because I don't wish to astigmatize any particular milk plant, Master, and in the same way I would not like to specify any mill other than the one I have already mentioned.

Q. Do you regard these particular bottles bacteriologically defective so that as to the ordinance—that the dairy would be astigmatized?

A. No.

Q. Then no stigma will attach, will there?

Mr. Rall: Couldn't he give the location of it, I mean the town or something like that?

The Witness: By stigmatize, I didn't mean in any specific sense except that possible interpretation that any layman might put upon any evidence in connection with the analysis.

Mr. Schaefer: Q. All right, Doctor. In what town, if any, was that dairy located?

A. In Geneva, New York.

Q. Subject to the inspection of the health authorities of Geneva, New York?

A. Subject to, you mean—under their jurisdiction or supervision, officially?

Q. That's right.

A. Not in connection with an official supervision, although I believe there was an inspector present, but
219 that was not by design, now.

Q. What governmental unit, if any, controls the operations of that dairy from a sanitary standpoint?

A. It operates under the local health ordinance of the city.

Q. That is under the jurisdiction of the health authorities of the City of Geneva, is it?

A. Yes, sir.

Q. Did you see those bottles received and washed in the soaker type washer?

A. No.

Q. Did you see them receive any rinsing?

A. No.

Q. Did you see them receive any chlorine treatment?

A. No.

Q. You don't know whether those things were applied or not, of your own knowledge?

A. I know that is the system. That is the system they go through but I was not present at those various points.

Q. Now, what was the last periodic test before that one, Doctor?

A. Those tests could not be called periodic, because I have never conducted such investigation as is shown as being done by agencies that conduct or initiate any projects and service in that particular field. These
220 tests are inspired in the interest of research and in the interest of attention, if class room work were involved or for personal interest. Previous to that as near as I recall, there had been a lapse of years before regular examination. I recall that yearly, annual tests were run between the years of—

Q. These are tests run by you, Doctor?

A. Yes, 1924 to 1928.

Q. Where were those runs?

A. Those were in Canada.

Q. Did you, Doctor, inspect the treatment that the bottles received in the dairy before you made your examination?

A. No.

Q. Does that state fully your own experience with respect to tests on glass bottles?

A. Yes, so far as the personal experimentation is con-

cerned. In addition to that, of course, we have the result from the literature.

Q. Yes.

A. And they are valuable sources.

Q. I am interested now in your own experience.

A. Yes.

Q. And that is the experience on which you base your statement on direct examination, and I am quoting it
221 now as it appears "My experience is that there is a higher degree of sterility in the paper bottle than in the glass bottle." That is the experience.

A. That is a personal experience, with the addition of the public reports and publications.

Q. But that is your personal experience?

A. Yes.

Q. And in your sterility tests with paper containers, Doctor, how much broth do you put into the container, Doctor, and incubate?

A. Ten cubic centimeters.

Q. You did something yesterday that interested me when you were shown a roll of paper, you were asked where that paper came from. You said it came from the Cherry River Paper Mill. How did you determine that?

A. By the printing.

Q. You mean you did not determine—

A. Not by looking at the paper.

Q. Not by looking at the paper?

A. No, sir.

Q. You are not that good.

A. I may be, but I am too modest to admit it.

The Master: We shall take a short recess.

(A recess was taken.)

Mr. Schaefer: Q. Doctor, how many grams of paper are there in the Pure-Pak Paper Container, quart size?

Mr. Gariepy: I can't hear the question, Mr. Schae-
222 fer. Will you speak louder?

The Master: Will you read the question?

(Question read by the reporter.)

A. I cannot answer exactly.

Mr. Schaefer: Q. Have you an approximate idea?

A. I believe the container weighs about 40 grams.

Q. Is that a fair approximation, in your opinion?

A. Yes.

Q. The pint container, how much?

A. I have not weighed a pint container.

Q. Doctor, I want to clear up the purpose of the disintegration tests that you run, paper disintegration tests. There appears in the transcript of yesterday's testimony, page 83, a statement by Mr. Gariepy to the effect that the purpose of the disintegration test is to determine how much absorption there is in the paper. Is that the purpose of those tests?

A. No.

The Master: Mr. Gariepy was wrong, then?

The Witness: Yes.

Mr. Gariepy: I submit that any statement I make is not evidence. Counsel should not argue about any statement I make, nor ask the witness, rather than his own.

Mr. Schaefer: Q. Doctor, you stated in your direct examination yesterday that paper board after it
223 leaves the Cherry River Paper Company does not contain sufficient moisture for any type of bacteria to live on.

A. Any type of organisms with which I am familiar.

Q. How, then, do you account for the fact that your disintegration tests show bacteria present?

A. Will you please read that question again?

(Question read by the reporter.)

A. The answer to that question revolves around the use of the term "to live on." By my interpretation of that, is the sufficient moisture present for the organism to develop, grow and multiply.

Q. That is, it can live?

A. It can live, it can exist, but it can't multiply.

Q. And then when it is furnished food in its living condition, it will multiply?

A. As any bacteriological media.

Q. In the paper manufacturing process, does the time that the paper is exposed to the heat of the dryers vary with the thickness of the paper?

A. Will you read that question again, please?

(Question read by the reporter.)

Q. Does it take longer to dry thick paper, Doctor, than it takes on thin paper?

A. There is a relation there, yes.

Q. That is, it does take longer to dry thick paper
224 than thin paper?

A. Yes.

Q. And so thick paper is in contact with the heat of the dryers for a greater length of time?

A. Yes.

Q. Who selects the paper used by you from the Cherry River Paper Mill in your disintegration tests?

A. The preparation of the samples is carried on by the bacteriological staff of the mill, under directions.

Q. Under whose directions?

A. Under my direction, that is, under directions issued by my laboratory.

Q. Is any one from your laboratory present when the selection is made, Doctor?

A. Only if the selection is made during a survey.

Q. And that is not the normal condition?

A. That is not a constant situation.

Q. Now, in your opinion, Doctor, will consistently high standards of quality of paper, in paper mill operations, and possibly approval by public health officials, depend on the constant adherence to a program of micro-biological control?

A. Yes.

Q. Has the industry made any suggestion as to the making of sanitary inspection of plants manufactur-
225 ing milk container board?

A.. Yes.

Q. What was that suggestion?

A. The suggestion made by the mills was that periodic visits and inspections should be made by the Geneva Laboratory.

Q. That amounts to voluntary action on the part of pulp and paper mills or conversion mills?

A. Yes.

Q. And another method suggested was by federal supervision?

A. That is a possible means of inspection.

Q. Are those the only possible means, Doctor?

A. The only possible means of inspection?

Q. Yes.

A. Unless laboratory tests are made sufficiently comprehensive and complete so that the test of the finished product received by a municipality may be considered an index to the sanitary condition of manufacture.

Q. Laboratory tests made by whom?

A. Made by a qualified bacteriologist within the area or municipality.

Q. That is a suggestion that had not occurred to you as of January, 1938, that last suggestion?

A. It probably had occurred to me but due to the fact that such a method or procedure depends upon the
226 development of methods, it might be some time before such a procedure could be worked out to be called an effective means.

Q. Now, Doctor, an official publication of the International Association of Milk Sanitarians in Orange, New Jersey, which was reprinted in the journal of Milk Technology January, 1938, issue, you made this statement: "Many purchasers and consumers of paper food containers are sensitive to the bacterial counts contained in foods and to the presence of undesirable organisms." Will you explain that statement, please, Doctor?

A. There is an increased interest today on the part of the public in sanitation.

Q. Is that what you mean by "sensitive," Doctor?

Mr. Gariepy: Let him finish.

The Witness: I have not quite finished.

Mr. Schaefer: Q. Go ahead.

A. Through the operation of various factors these days, the public is being made aware of sanitary conditions, the nutritive value of food materials, food products. In some cases the bacteriological counts of milk are published through the daily press, and it has been known and it is true that people inquire as to the bacteriological counts of the milk they consume. Questions are asked more frequently now than ever before in my experi-
227 ence as to the bacteriological condition of foods generally. That was the basis on which that statement is made.

Q. Was that what you meant when you said that consumers are sensitive to the bacterial counts and to the presence of undesirable organisms?

Mr. Gariepy: I think the question has already been answered by the Doctor's statement.

The Master: Let him answer it again.

A. It is a question of the exact meaning of "sensitive" —"cognizant of"; appreciative of would be better.

Mr. Schaefer: Q. Is that what you mean, you say you used that language, didn't you, Doctor, at that time?

A. Appreciative of, yes.

Q. You didn't mean sensitive; you meant appreciative of?

Mr. Gariepy: I object to his arguing. He has told what he meant.

Mr. Schaefer: I am not arguing. The Doctor and I get along fine.

Mr. Rall: He told you what you meant by one question you asked and I am glad to have him do so.

Mr. Schaefer: And I am glad to have him tell me.

The Master: Q. Now, Dr. Sanborn, can you answer the question without the assistance of all these gentlemen?

228 A. Yes, sir.

Q. Let's hear you answer it.

A. By "sensitive" I mean "appreciative of," and showing great discrimination toward the micro-organisms or the bacterial content of food.

Mr. Schaefer: Q. You didn't mean physically sensitive?

A. No.

Q. In that same paper, Doctor, you wrote this: "Appreciable quantities of dirt and foreign matter may be noticed in the new paper board during their manufacture, particles of metal, pipe scale, sand and carbonaceous matter sometimes occur as well as various foreign fibres and organic residues, the presence of which is occasionally associated with unhygienic or careless practices." Is that statement still true?

A. Yes.

Q. In your opinion, should only those mills which successfully control micro-organisms within their systems be considered by health officials for an approved sanitary status in the manufacture of food wrappers and containers?

A. Yes.

Q. When you made this statement, Doctor, "As manufacturers continue progress in sanitary methods of production and handling, it is probable that standards and specifications will become more stringent"?

229 A. Yes, sir.

Q. You were referring to the recent manifestation, relatively recent manifestation of interest in sanitation?

A. Yes, sir.

Q. And to the improvement that you described earlier this morning?

A. The answer is yes.

Q. Now your paper that you read at the annual meeting of the Massachusetts Milk Inspectors' Association at Worcester, Massachusetts, January 5, 1938?

Mr. Rall: What was the date?

Mr. Schaefer: January 5, 1938.

Mr. Rall: Thank you.

Mr. Schaefer: Q. You stated that several pulp and paper mills are endeavoring to meet certain prescribed Sanitary regulations and to achieve as closely as possible a bacteria-free board for milk containers. To what prescribed standards did you refer, those prescribed by yourself?

A. Those suggested by the research work that I have carried on as illustrated by the conferences, the report of the first and second Milk Container Board Conferences.

230 Q. And at that time you also said this: "Their success in the demand of this goal will depend upon the application of a program of strict micro-biological control based on the utilization of pure process whether satisfactory bacteriacidal treatment, practical mill sanitation and proper protection of finished paper"—those same factors will be today determining of their success in attaining that same goal, in your opinion?

A. Yes.

Q. What is the action of heat resistant organisms on milks? I have in mind this statement you made that the action of heat resistant organisms on milk is well known.

A. You are now asking that question from the standpoint of bacteriological tests.

Q. In order to save time I will withdraw the question, Doctor.

A. There are two answers: From the standard of bacteriological tests—

Q. Let it go. We don't need it. I am sorry, Doctor. I am trying to get through and I don't want to take up too much time.

A. All right.

Q. Now you made the statement in that same paper 231 to which I last referred, Doctor, "Without intimate knowledge and control of the boards used, results of rinse tests made may be inconsistent and misleading."

A. Yes.

Q. What do you mean by "intimate knowledge and control of boards used"?

A. Knowledge of the bacteriological condition, the bacteriological counts of the board.

Q. Is that all?

A. So far as your question was concerned.

Q. Then what you are saying is this, isn't it, without intimate knowledge and control of the bacteriological condition of the board, a test made to determine the bacteriological condition of the board is inconsistent or misleading?

A. No.

Q. What is the purpose of the rinse test?

A. The purpose of the rinse test is to determine the number of organisms per container.

Q. That is to determine the bacteriological condition of the board?

A. That is to determine the bacteriological condition of the finished container as it is filled with milk, at the time it is filled with milk.

232 Q. That is to determine the bacteriological condition of the finished container?

A. To determine the bacteriological condition of the finished container and your result.

Q. Without knowledge and control of the bacteriological condition of the board, rinse tests conducted to determine the bacteriological condition of the finished containers are apt to be misleading?

A. May be misleading, yes.

Q. What do you mean by control of the board used, Doctor?

A. The methods used in controlling the bacterial content.

Q. That is, you mean the things we have discussed previously?

A. Yes, sir.

Q. Sanitary conditions and so on?

A. Yes, sir.

Q. In a paper entitled "The Sanitation of Paper Milk Containers", which was presented apparently by you and Dr. Breed before the International Association of Milk Dealers in Cleveland, Ohio, on October 18, 1938, you said that where containers are not effectively moisture-proofed, several rinses with sterile water yield counts as high as those from the first rinse even after as many as ten trials.

233 A. Yes.

Q. Why is that so, Doctor?

A. That question refers to paper milk containers generally without specific reference to any one type.

Q. All right.

A. Where certain types of containers may not be adequately paraffined and the particular paper board from which the container is made may not be of sufficiently high bacteriological condition, it is possible to obtain bacteriological counts with successive rinses of the same container.

Q. Up to as many as ten?

A. Up to as many as ten.

Q. Beyond ten?

A. It is possible beyond ten, in some cases you would continue to obtain counts, although I did observe that there was a tendency for the counts to decrease even to the point of yielding no organisms after that number of rinses.

Q. What are the factors influencing the efficiency of the paraffining process, Doctor?

A. The efficiency of the paraffining process is the coating agent or, as the general moisture preventative agent.

Q. First, as a coating agent?

A. The temperature of the paraffin bath is one; the 234 condition of the surface of the paper board to be paraffined.

Q. With respect to what?

A. The smoothness or the roughness of the surface.

Q. The pority of the paper board?

A. The pority of the paper board is one; the method of cooling.

Q. How about formation?

A. Formation plays a part, although I am not so sure in relation to coating as in the case of pregnation which you are probably going to ask me next. Formation does play a factor.

Q. By formation, you mean the shape?

A. No, I don't mean the shape. I mean the uniformity of the sheet throughout.

Q. I don't know what that means, Doctor. Will you explain it?

A. If you hold the sheet up to the light, you can notice some places it is thicker than others and in some places it is thinner. That is the formation.

Q. Do you mean the uniform thickness of Plaintiff's Exhibit 3?

A. No, it is the uniformity of the distribution of the fibres in the suspension made to make the sheet. If they are well distributed, you get a well-formed sheet. If they are irregularly distributed, there will be irregularities.

235 Q. What determines the presence or absence of those irregularities, Doctor?

A. There are a number of factors. There are a number of factors, the treatment the pulp has received, the possible presence of slime particles in the pulp and the particular method used by the mill to make its sheet, the way the pulp is conducted to the machine, the way it is placed in the machine.

Q. How about the method of paraffining and draining?

A. The temperature of the paraffin in the paraffin bath, of course, is one of the important factors.

Q. Yes.

A. And the rate of cooling.

Q. The what?

A. And then the rate of cooling.

Q. Is that what you mean by the method of paraffining and draining?

A. Yes.

Q. There is not something else?

A. There may be something else depending on the particular procedure, the particular paraffining procedure. Paraffining procedure varies and there is a method of spraying and there is a method of immersion.

Q. Yes, and that is the thing you mean when you speak of the method of paraffining?

236 A. Yes, sir, and with the equipment incidental to those acts.

Q. What do you mean by that?

A. There might be certain equipment used in connection with paraffining which might determine the uniformity of the coating.

Q. Can you be more precise?

A. It is possible that a certain part of the equipment between the immersion and the draining might become hot and the paraffin might drain off practically from that surface. That is just a situation that might arise.

Q. It might drain off and harden?

A. It might drain off from the inside or the outside

of the container, it might make irregularities in the coating. That is an incidental thing, that is not particularly important.

Q. Now, will you take up the moisture-proofing aspect of paraffin, what factors are of importance there?

A. The same factors so far as the sheet and the temperature is concerned holds in the case of the impregnation of the sheet with a moisture-proofing agent.

Q. What is the influence of temperature on the effectiveness of the paraffining process, Doctor?

A. In my experience a better coating of paraffin is
237 obtained at lower temperatures or the temperature scale employed by all manufacturers of paper containers, and a less complete coating is obtained at the higher temperatures.

Q. What are those temperature ranges?

A. Those temperature ranges in a general way, there might be considered to be 160 degrees to 185 degrees Fahrenheit.

Q. You get the most effective moisture-proofing at the lower temperatures?

A. You get the most effective coating at the lower temperatures. There are two factors in this: There is the passage of the paraffin into the board which we call penetration or impregnation and then there is the leaving on the surface of a coating. You could get impregnation at high temperatures, but in the same way a tendency would be for more run off of paraffin when the paper board is heated up to a higher temperature. On the other hand, if the lower temperature is used, you will leave a surface coating as well, in addition to impregnation.

Q. Is that different with respect to temperature, uniform, in those ranges?

A. It is fairly uniform.

Q. How about ranges below 160, would that be
238 more effective from a coating point of view?

A. From a coating point of view it would be more effective but there comes a time when it becomes uneconomical due to using more paraffin than you need to use and may not give you a well appearing container due to the fact you have used so much paraffin, but it is really an economic factor which prevents the use of very low temperature, as you use more paraffin.

Q. It ranges, and at ranges below 160, the coating would be more effective?

Mr. Gariepy: I object to that. The witness just answered that, Master. He said—

The Master: Let him answer it.

The Witness: It would be just as effective.

Mr. Schaefer: Q. From the point of view of coating, would it be more effective, say, at 155?

A. It might be more effective at 155.

Q. 150?

A. I am not acquainted with the economic limit so far as that is concerned.

Q. I am not talking about the economic limit. Disregard economics. I am talking about the production of a better coating, and that is all.

A. I have not observed any coating below 160 in a regular commercial operation.

Q. In your opinion, however, based on your ex-
239 perience and your observation, would a coating at 150 be more effective?

Mr. Rall: For what purpose?

The Master: The same purpose that it is put on now, I suppose.

The Witness: Yes.

Mr. Schaefer: Q. It would be?

A. Yes.

Mr. Schaefer: I am almost through.

The Master: Go ahead.

Mr. Schaefer: Q. Now, does the length of time of immersion in paraffin influence the effectiveness of the paraffining process as a coating agency?

A. It is a factor but due to the wide variation among commercial operations in that type of paraffining, it is difficult to state just what the time factor should be or might be. In one operation a very short time is adequate. With another type of operation, it is necessary to use a longer period of time. Those are adjusted and standards for each operation to yield the most effective results. That is, I mean to adequately moisture-proof the container.

The Master: May I interpose a question there?

Mr. Schaefer: Surely.

The Master: Q. When you are talking about par-
240 affining I notice that that container first, on the outside there appears the statement "Keep cool"—and "Keep Dry". Does that have any relation at all to the paraffining?

Mr. Rall: Referring now to the milk carton container?

The Master: The big container there.

Mr. Rall: The corrugated box containing a dozen quart dummies?

The Master: Yes.

The Witness: On the box, is it?

The Master: Yes—"Keep cool" and "Keep dry".

Q. Why the "Keep dry", particularly? And "Keep cool"?

A. To prevent the carrier carton from soaking up water and in that way collapsing or not being suitable for further use.

Q. The carrier carton?

A. Yes, that is what that box is called, the carrier carton.

Q. Does it have any relation at all to the container of the milk?

A. It simply is a carrier for the container.

Q. Does that injunction or mandate to keep dry have anything to do with the milk carrier itself?

A. Not any direct relation.

Q. It only has reference to this outer carton?

241 A. To the box, that's right.

Mr. Schaefer: Q. Now, on your direct examination yesterday, Doctor, speaking about the sterilization of glass bottles, you said this: "In my experience commercial practices are not comparable in efficiency with home practice." On what experience of yours is that statement based?

A. It is not based on experience, only on observation, and only my opinion.

Q. Only what?

A. Only my opinion.

Q. And on what observation, Doctor?

A. The observation of the procedures utilized by the housewife, the care taken.

Q. How many wives or housewives have you seen wash glass milk bottles?

A. I am enumerating a good many of my friends, or I can enumerate them, but that would be quite a task. It has been a common observation of mine to notice such things, since I am interested in sanitation.

Q. Do you want to qualify the statement that you made yesterday in any way, Doctor?

A. I was not sure whether that was on or off the

record, it was more or less a facetious remark, although I believe it to be true, I cannot substantiate it on regular bacteriological tests.

242 Q. Doctor, calling your attention to Plaintiff's Exhibit 13, will you please examine the middle row of milk containers shown on that exhibit and tell me whether or not in your opinion those containers in that middle row are bottles?

A. In my opinion those containers would be more properly termed cups.

Mr. Schaefer: That's all, Doctor, thank you.

Mr. Rall: May I have the January, 1938, issue of the Milk Technologist and the paper, the Milk Inspector?

I will ask to have this document marked Plaintiff's Exhibit 21 for identification.

(The document referred to was thereupon marked by the reporter "Plaintiff's Exhibit No. 21 for identification".)

Redirect Examination by Mr. Rall.

Q. Doctor, I show you Plaintiff's Exhibit 21 for identification, consisting of a fly leaf and five printed pages and ask you to examine it.

(Witness examines document.)

Q. (Continuing) Is this exhibit which I show you the complete article of yours, from the January, 1938, issue of the Journal of Milk Technology?

A. Yes, it is.

243 Q. From which counsel read a portion?

A. Yes.

Q. Now, look at Plaintiff's Exhibit 22, which I will ask to have marked for identification at this time.

(The seven planograph sheets referred to were thereupon marked by the Reporter "Plaintiff's Exhibit No. 22 for identification".)

A. Yes.

Q. That document which consists of a fly leaf and seven planograph pages?

A. Yes.

Q. Is that the paper which you read to the annual meeting of the Massachusetts Milk Inspectors' Association January 5, 1938, of which counsel read portions?

A. Yes.

Mr. Rall: I offer in evidence Plaintiff's Exhibits 21 and 22.

Mr. Schaefer: I object to it.

Mr. Rall: I ask leave to substitute copies in lieu thereof.

The Master: He objects. What is the purpose of this offer?

Mr. Rall: The purpose of this offer is to show the complete statement of the witness from which counsel attempted to extract certain portions.

244 The Master: It doesn't make it, the whole document, admissible if a man talks for ten hours and in the course of a ten-hour talk says some word in one paragraph, you might conceivably have the whole paragraph, but that doesn't make the whole ten-hour talk competent.

Mr. Rall: It was all on the same general subject and I think in fairness to the witness and in fairness to our case, counsel should not be permitted to extract one paragraph without putting the entire talk in, because the value of that cannot be tested.

The Master: There is no showing that the rest of the article is in any way explanatory of what was read or extracted by counsel.

Mr. Rall: I say when he is discussing the general subject of the sanitation of paper milk containers, that whatever he says in that record, and it is all relevant to that subject, is relevant here.

The Master: What do you say about it, Mr. Schaefer?

Mr. Schaefer: That is a new doctrine to me. There is no basis for the offer.

The Master: I sustain the objection.

Mr. Rall: Q. On your cross-examination you referred to certain standards of sanitation for paper containers. I show you Plaintiff's Exhibit 19, particularly pages 50
245 through 53, and ask you whether or not those are the standards that you referred to?

A. Those are the standards that I referred to.

Mr. Rall: I now re-offer separately pages 50 to 53, inclusive, of Plaintiff's Exhibit 19 that was identified yesterday.

Mr. Horan: Was that introduced in evidence?

Mr. Rall: No. It was refused.

The Master: Will you read that back, please?

(Record read by the reporter.)

The Master: Is there any objection?

Mr. Schaefer: Yes, sir, there is an objection. My recollection of the cross-examination was that no question was

asked Dr. Sanborn as to the standards proposed by him, which is what those standards are. I asked him as to whether or not there should be standards, whether there were standards for various things whether in his opinion those standards were satisfactory. That is all.

Mr. Hall: Now, with all due respect to Dr. Sanborn, I think it should be received, if you include page 54. That is satisfactory, isn't it, Mr. Schaefer?

(Discussion outside the record.)

Mr. Schaefer: I don't think his proposed standards are material here.

Mr. Rall: There has been an effort made to lead the
246 Court to believe that this thing is a wholly untried purely experimental proposition, perhaps a crack-brain proposition.

The Master: I have not been aware of that.

Mr. Schaefer: I was not aware of that.

Mr. Rall: These standards which are part of the literature of this field, public health field, quite apart from the question on cross-examination, we certainly have the right to show.

The Master: You just want them in to show somebody's thought on what ought to be done with this kind of material.

Mr. Rall: As result of the conferences, but the witness has already testified—at which the City of Chicago was represented—and that these standards have been published and given wide distribution.

Mr. Schaefer: We don't know whether the City of Chicago got them or not.

The Master: I can't see where it will do any harm one way or another. I will let it in for what it is worth.

Mr. Schaefer: What are we letting in?

Mr. Rall: I have offered separately, pages 50 to 53, inclusive, of Plaintiff's Exhibit 19 without prejudice to the offer of the entire document as was made yesterday. I offe- pages 50 to 54 of Plaintiff's Exhibit 19 without
247 prejudice to the offer of the entire document which was made yesterday.

(Discussion off the record.)

Mr. Rall: It is understood I am offering pages 50 to 54 of Plaintiff's Exhibit 19, commencing "Paper Containers for Milk Boards, of sanitation to be observed in their manufacture and use," commencing about the middle of page 50 of Plaintiff's Exhibit 19 for identification.

The Master: Has there been a ruling on the pages 50 to 54? Did you withdraw your objection to pages 50 and 54?

Mr. Schaefer: With the exception of the portion of page 50 which has been designated by Mr. Rall, I withdraw the objection.

The Master: That may be received.

(Said pages 50 through 54, inclusive, of the document heretofore marked Plaintiff's Exhibit 19 for identification, so offered and received in evidence as PLAINTIFF'S EXHIBIT 19, and is attached hereto and made a part hereof.)

The Master: Now you are going to Exhibit 12.

Mr. Rall: Yes.

Q. I show you Plaintiff's Exhibit 12 and ask you
248 whether that is the article entitled "Sanitation of Paper Milk Containers" from which counsel read to you and asked you questions on your cross-examination?

A. Yes, sir.

Mr. Rall: I offer in evidence PLAINTIFF'S EXHIBIT 12 in explanation of the cross-examination. On the same theory, I offer PLAINTIFF'S EXHIBITS 21 and 22.

Mr. Schaefer: I object.

The Master: What is that?

Mr. Schaefer: This is another document to which he said I referred on cross-examination.

The Master: Some extract read from it and you want the whole article in?

Mr. Rall: Yes.

The Master: If I make the same ruling, it may be excluded, unless you can show there is something in that document which explains the extract.

Mr. Rall: To clear up this question of tests on paper milk cartons, there are two particular types of tests: The disintegration test and the rinse test, is that correct?

A. The disintegration test, the rinse test and sterility test.

Q. What is the nature of the sterility test?

A. The sterility test involves placing into the container under therapeutic conditions sterile nutrient broth,
249 rinsing the container with broth and incubating the broth in the container for a suitable time.

Q. Both the rinse and sterility tests are designed to disclose the presence or the absence of surface bacteria or micro-organisms, is that correct?

A. Yes, sir.

Q. The disintegration test is designed to do what?

A. To show the presence of micro-organisms, if any, in the entire fibre board.

Q. Are there standard procedures for the making of all of these tests that you referred to?

A. No.

Q. Have you on pages 47 to 50, inclusive, set forth a procedure for the making of disintegration tests?

A. Yes.

Q. You referred yesterday to a different type of machine than you pictured here.

A. Yes, sir.

Q. How many types of machine are there available for the making of this disintegration test?

A. I have knowledge of approximately five.

Q. Are these expensive or inexpensive machines?

A. They vary in cost.

Q. Will you give us an approximation of the price range?

250 A. So far as I am familiar with the subject, the cost of the devices that I have used are about $20 to $30.

Q. Referring now to Plaintiff's Exhibit 3, incidentally you tore that yesterday to demonstrate the fact that the printing was on the surface only.

A. Yes.

Q. And before you tore it, it was just a flat carton with four sides, top and bottom under seal?

A. Yes.

Q. Would a disintegration test on that carton or cartons of that type made in the City of Chicago, after the carton has been converted and sent to the plant, in your opinion disclose whether or not that carton had been manufactured under sanitary conditions and was then in a sanitary condition?

A. Do I understand you to say made in the City of Chicago?

Q. Tests made in the city of Chicago.

Mr. Schaefer: I object to that question. The witness has already answered that same question.

Mr. Rall: As to board generally, but you refused to let him talk about this board. You wanted to talk about everything else.

The Master: I will let him answer.

The Witness: Such tests would give an index to the
251 sanitary condition of the original board in the process of manufacture.

Mr. Rall: Q. And it would give, would it not, an absolute test as to whether or not that particular carton that was under examination was sterile or contaminated?

A. Yes.

Q. And by picking at random cartons of that kind at the milk plant, would it be your opinion that the public health authorities in the City of Chicago could determine whether or not the cartons being used were sterile or contaminated?

Mr. Schaefer: That is objected to, if the Master please, because that determination involves a degree of the definition which is officially committed to the officers of the health department of the City of Chicago.

Mr. Rall: You start to prove that the health department would have to use their resources to establish a branch at the Cherry River plant, at least that was the implication of that testimony.

Mr. Schaefer: I wanted to find the facts about the method of manufacture of the paper.

Mr. Rall: We are interested in the Pure-Pak container and feasible methods of health control and not theories.

252 Mr. Schaefer: It seems to me that is a matter for argument.

The Master: Read the question.

(Question read.)

The Master: I will let him answer.

A. Yes.

Mr. Rall: Q. You referred to various types of machines and various exposures to paraffin or to various paper cartons. Referring now to the Pure-Pak carton, can you state what the paraffining treatment by the Pure-Pak machine is?

A. The paraffining treatment by the Pure-Pak machine is a treatment of immersion.

The Master: Q. Is that any different than the treatment that you described yesterday?

A. It is substantially the same as I described yesterday.

Mr. Rall: Q. Do you know how long that immersion takes place and the degrees?

A. So far as my knowledge goes I would say that the temperature is approximately 172, to 176 degrees fahrenheit for a period of approximately 25 seconds.

Q. When you stated on cross-examination that paraffining at 150 degrees would be more effective, you meant the coating would be thicker, is that true?

253 A. I meant the coating would be thicker.

Q. In your opinion is the coating by an immersion for the time and at the temperature you have stated in the Pure-Pak machine sufficient to give an effective paraffining particularly having in mind water-proofing and sealing as distinguished from any bacteriacide action?

A. Before I answer that question, I would like to say there is one other factor that I was asked about on cross-examination or at least in the testimony during cross-examination to the effect that there are other factors that influence coating, or coating efficiency, one of which was the surface condition, the smoothness or the roughness of the surface and possibly other physical factors, keeping in mind that there are variations in that.

Q. I would like to talk to you about the carton that is here involved.

A. Yes.

Q. I just want to talk about this carton and our machine.

A. There are still variations in the physical properties of various paper board and so far as my knowledge goes, given a satisfactory board which, of course, can be produced and is being produced, it is possible to obtain

254 effective moisture-proofing of this container.

Q. Have you made the tests that you described on containers similar to Plaintiff's Exhibit 2?

A. Yes.

Q. Have they been made after they have been paraffined?

A. Yes.

Q. And in your opinion, was the paraffining job, so to speak, on the samples that you tested efficient and satisfactory?

A. The impregnation of the board was satisfactory; there was a certain amount of surface fibre that would pick up a small amount of milk, not enough in my opinion to be of significance either from a sanitary standpoint or from a standpoint of the weights and measures. The average loss from a quart container of milk would average from two to three cubic centimeters.

Q. How many cubic centimeters are in a quart of milk?

A. 946 cubic centimeters.

Q. You referred yesterday in response to the Master's questions about the possibility of the paraffining being chipped off by ice. I show you a corrugated carton approximately 12 inches long and 8 inches wide, 10 inches high, which the Master referred to—"Keep cool"—"Keep dry"; showing you the carton, there are 12 dummies similar to Plaintiff's Exhibit 2. Will you state whether or not
255 this is the method by which the milk, after it is packed and taken from the machine, is packaged for delivery?

A. Yes, that is the method.

Q. Have you seen that done?

A. I have seen that done.

Q. And when the carton is prepared for placing on the truck, is the top sealed with an adhesive strip?

A. Yes.

Q. Such as this which has been torn open?

A. Yes.

Q. Referring again to Plaintiff's Exhibit 2, prior to yesterday the pouring spout had not been opened, is that true?

A. Yes.

The Master: Q. How does the milk man carry that around from apartment to apartment?

A. He can carry it on his shoulder. The weight is not great.

Q. Every milk man I have ever seen has a tray of some kind with a handle on it and the milk bottles fit into the tray and he carries bottles of cream and milk and carries a number of other things. I don't see how he is going to carry any milk bottles around on his shoulder, the way you have just stated.

Mr. Rall: I will make this statement: I don't know
256 of any house-to-house delivery using this and I don't expect it.

The Master: Using what?

Mr. Rall: Using paper cartons.

The Master: You don't know of any?

Mr. Rall: I expect there may be a few small installations. I expect that the use of them will be pretty much confined to chain stores, at least stores and milk people. That has been the history of it.

Mr. Schaefer: Just on that point, let me get straight. Is it agreed between the plaintiff and the defendants that the

use of these containers involved in this suit is here sought only for use in chain store distribution?

Mr. Gariepy: No. For chain store distribution and for sale to the retail trade as the retail trade desire it and as well as can be made. The matter of the handle or the matter of the details, that situation will be taken care of when the milk man sees fit to make delivery.

The Master: The reason I asked about the tray was that it seemed to me in handling the individual paper bottles, there might be some friction, there might be some moisture on the outside of the bottles. That is what I observed in that tray.

Mr. Rall: I got your point.

257 The Master: You are talking about delivering the various paper bottles in a cardboard carton to chain stores.

Mr. Gariepy: Which are being done at the present time in 46 suburban towns and villages in Cook, DuPage and Lake Counties, Illinois.

The Master: What is being done?

Mr. Gariepy: Delivery just like that.

The Master: To individual consumers?

Mr. Gariepy: To chain stores and from the chain stores to consumers as they come in.

Mr. Rall: I don't know why I said chain stores, but it is stores. I don't think we are willing to limit the permission sought to chain store sales, but I am very frank to say that if the City were to offer us a permit so limited, we would think a long time before we refused it, because the history of this has been in other communities that it largely is a sale through a chain store proposition because of the economic principle that the use of the glass milk bottle, you get it back, which you can do if you deliver it to the home, and you know where it has been, the use of the glass milk bottle whch is less than the cost of destroying one of these.

Mr. Schaefer: I didn't want to mislead you by any
258 question, but I wanted to find out what the situation is. I have no authority to issue you a permit.

Mr. Rall: So far as the house-to-house delivery is concerned, I think that would be infrequent because of the economics involved here.

The Master: On account of the economic problem, did you say?

Mr. Rall: Yes.

The Master: What do you mean?

Mr. Rall: In other words, a glass milk bottle according to some authorities is used about 30 times. The use of that glass milk bottle is cheaper than the cost and the destruction of one of these paper containers which can be used only once. To give another illustration, the actual costs are more than the use of a glass bottle which they sometimes use certain people to collect them, in order to get their bottle back, they have an organization and they have to have a deposit and they have several sources through which they work but they would rather pay a little premium on the paper container than to fuss with the bottle and getting the deposit for the bottle and bringing the bottle back and making the refund and then, too, this is about half of the space that the glass bottle takes.

The Master: Did the experiments you were dis-
259 cussing here have in mind the sale of some of these cartons containing milk bottles to chain stores?

Mr. Schaefer: I would like to say, if the Master please, that we are not interested in the consumer acceptance. We are interested only in the public health angle. As a matter of fact, we are not interested at all in the economic aspect of it. There is a debatable question whether a public health officer should be interested in the cost of milk. In this instance, we are not entering that ground.

Mr. Rall: Mr. Gariepy is going to have some more questions, probably more than I will have. May we adjourn now, Master?

The Master: Are you through with your questions?

Mr. Rall: Yes.

The Master: We will adjourn now until 2 o'clock.

(At 12:50 P. M. recess taken to 2 o'clock P. M.)

260 • • (Caption) • •

Thursday, June 1, 1939,
2 o'clock p. m.

Met pursuant to recess.

Present:

Frederick A. Gariepy, Owen Rall, of counsel, on behalf of plaintiff;

Barnett Hodes, Corporation Counsel, City of Chicago, by Walter V. Schaefer and Charles P. Horan, Assistants Corporation Counsel, on behalf of defendants.

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261 The Master: You may proceed.

JOHN RAYMOND SANBORN, was called as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Mr. Gariepy: I think the record ought to show clearly that the redirect examination by Mr. Rall of this witness this morning is being accepted by the plaintiff, Fieldcrest Dairies, and also the offering in regard to Plaintiff's Exhibits Nos. 12, 20, 21 and 22.

Redirect Examination by Mr. Gariepy.

Q. Doctor, Mr. Schaefer asked you at length yesterday concerning the matter of acid water and bacteria growing. I ask you the question, does bacteria grow well in acid water?

A. No.

Q. Could white water contain pathogenic bacteria?

A. No, in the normal processes of operation.

Q. Have you examined Plaintiff's Exhibit 2 here, the single service container, with regard to the matter of bacteria count about the lip, the pouring lip? That is the
262 filled container. I am showing you Exhibit 2, which was born yesterday at the pouring lip.

A. I have examined this stock around the pouring lip.

Q. And what did you find concerning the bacteria count

of the stock and the bacteria around the pouring lip of that container, Exhibit 2?

A. I found that the bacterial content of the stock around the pouring lip to be substantially the same as the original paper board from which the paper was made.

Q. With regard to your tests on the Pure-Pak container and the paper board that goes to make that container, did you perform certain tests on February 18, 1939, or about that date, on this subject, and report the same?

A. Yes.

Mr. Gariepy: I will ask the reporter to mark this report Plaintiff's Exhibit No. 23 for identification.

(The report referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 23 for identification.)

Mr. Gariepy: Q. Will you look at Plaintiff's Exhibit 23 for identification and tell me whether that contains your findings and your report on the chemical analysis and the research work you did on those containers?

A. It does.

263 Q. Is that the last one that you performed on the board in question here?

A. It is one of the last. There may have been one or two since then.

Q. Is that your signature, Doctor, on the bottom?

A. Yes.

Mr. Gariepy: I offer that in evidence.

Mr. Schaefer: I have no objection.

The Master: It may be received.

(The report of Dr. Sanborn referred to was received in evidence as PLAINTIFF'S EXHIBIT NO. 23, and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. Doctor, you were asked this morning concerning the matter of a standard with regard to the bacteria count in paper, paper board, that goes in to make up the single service paper milk container and whether there was such a standard or not. Do you remember that cross-examination?

A. Yes.

Q. Do you know what data and statistics the two hundred cities and villages that you mentioned yesterday in your testimony as using this container use in the way of data to guide them as to the suseptibility of the container?

264 Mr. Schaefer: I object to that.

The Master: Read the question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

Mr. Gariepy: For use in the sale of milk.

The Master: Q. Do you know?

A. Yes.

Mr. Gariepy: Q. What is that data that these cities and villages have and use, Doctor, as their guide as to the suseptibility of the container and the product?

Mr. Schaefer: That is objected to as immaterial.

The Master: I will let him answer.

The Witness: A. The only available standard that I have any knowledge of is the standard that was cited or suggested as the result of the research work done at the New York State Experimental Station.

Mr. Gariepy: Q. And that is the station you are connected with?

A. Yes.

Q. And do you know anybody else who gives out data on research and analysis on paper board that goes into single service containers to these cities and villages to use as a guide and as data?

Mr. Schaefer: That is objected to.

The Master: I will overrule the objection.

265 The Witness: A. That is the standard that is generally accepted. Other laboratories run the tests, but they conform to that general standard.

Mr. Gariepy: Mark this list Exhibit No. 24.

(The list referred to was thereupon marked Plaintiff's Exhibit 24 for identification.)

Mr. Gariepy: Q. I show you a piece of paper consisting of two typewritten sheets, with the last six lines in longhand, and ask you if you ever saw this before?

A. Yes, I have seen such a list before.

Q. What is that list, Doctor?

A. This is a list of the cities and towns using paper containers for milk.

Q. And have you furnished statistical data and research data to those cities and villages and towns for the use of the single service paper milk container?

Mr. Schaefer: That is objected to as immaterial.

The Master: There is no showing here that he has furnished anything to these cities.

Mr. Gariepy: I am asking him now.

The Master: He says he has seen such a list.

Q. Do you know whether that is the same list you saw the last time?

A. It is a similar list and probably is a copy of the
266 original list that I saw.

Q. Do you know whether it is a copy?

A. That would be very hard to state. To my best knowledge it is a copy.

Mr. Gariepy: Q. Doctor, did you prepare Exhibit No. 24 in your left hand at the time you prepared Exhibit No. 23 in your right hand and signed it?

A. At about the same time.

The Master: Q. Did you prepare this Exhibit 24?

A. I prepared such a list, yes, such an exhibit.

Q. Did you prepare this list? Not such a list.

A. This, I believe, is a copy of the original one that I submitted.

Mr. Gariepy: It was typed on the same machine, of course, as the original one. It was done as a simultaneous operation.

The Master: Q. Do you know whether this is a carbon copy of the list that you prepared, or not?

A. I did not see the carbon made. It is that type of list, yes, and I have no doubt that it is. Now, there is some writing down here that is not my own. I assume they are the same cities that I wrote in myself. It is better writing than mine, by the way.

Mr. Gariepy: Mr. Reporter, will you mark this letter as Plaintiff's Exhibit No. 25 for identification.

267 (The letter referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 25 for identification.)

The Master: Q. As you look over the list of those cities, according to your recollection those are the cities you had on your list?

A. Yes.

The Master: I will let Exhibit No. 24 go in, the list.

(The list of cities and villages referred to was marked PLAINTIFF'S EXHIBIT NO. 24, and received in evidence, and is attached hereto and made a part hereof.)

Mr. Schaefer: My objection, of course, goes to the materiality of it.

The Master: Yes, your objection goes to a different question. What was that question?

Mr. Gariepy: Q. I show you Exhibit No. 25 for iden-

tification, and in connection with Exhibit No. 24, the list, was that letter initialed and written by you?

A. Yes, it was.

Q. Now, does that refresh your recollection as to whether you prepared this list?

A. Yes, it does.

Q. And did you prepare this list, this last exhibit, 268 No. 24?

A. Yes.

Q. It bears your initials?

A. Yes.

Mr. Gariepy: I offer that letter in evidence.

The Master: Well, since the question has been opened up again:

Q. Do you know that the list marked as Exhibit 24 is the list that was enclosed with your letter?

A. I tried to reply, if you will pardon my hesitancy in answering, that in going over each one of the cities, as the Master suggested, I recognize practically all of them just from memory. I am convinced that it is, but of course I did not see the carbon.

The Master: Exhibit 25 may be received.

(The letter written by Dr. Sanborn referred to was thereupon marked PLAINTIFF'S EXHIBIT NO. 25, and is attached hereto and made a part hereof.)

Mr. Schaefer: Has the Master ruled yet on 24?

The Master: That question of his to which you objected? I don't remember what it was, now.

Mr. Schaefer: The question has been dropped, I take it, but I asked whether Exhibit 24 went in.

The Master: Exhibit 24 we let go in. He examined the names and said that to the best of his recollection the 269 list reflects the names he had in his mind.

Mr. Schaefer: And my objection shows, I take it, on the record, that it is immaterial.

The Master: Yes.

Mr. Gariepy: Q. Doctor, do you know or can you look at Exhibit 24 here and tell me how many of these cities and villages operate and supply milk under the United States Public Health Medical Ordinance and Service?

A. No.

Q. You cannot tell that?

A. No.

Q. You were asked this morning concerning the matter

of a standard milk bottle. I show you an exhibit here marked No. 26, being a quart bottle of milk.

(The quart bottle of milk referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 26 for identification.)

The Master: Wait a minute. We cannot very well make a bottle of milk an exhibit.

Mr. Gariepy: I know, but I want to have the top in here. There has been a lot of talk about the top and the cap. These exhibits that I have here and that I have put on the Master's table are bottles of milk I purchased twenty-five minutes ago across the street from the Federal Building at Barclay's, paid the regular price for them and got them
270 in the regular course of trade. I am going to ask the witness to identify, after they have been properly marked, these bottles, and testify concerning the caps at the top of the bottles and ask him concerning the type of cap he performed tests on for the bacteria count, whether or not that is the type.

I will ask the reporter to mark this smaller bottle of milk for identification as No. 27.

(The pint bottle of milk referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 27 for identification.)

Mr. Gariepy: Q. Doctor, I show you Exhibit No. 26, which is a quart bottle of milk, sweating on the outside, with a red cap, with a hood. Can you tell me whether or not that is commonly accepted in the trade as a standard milk bottle?

Mr. Schaefer: I object to that, on the ground that the witness' opinion on that question is not material.

Mr. Gariepy: You have been bahooing here about the standard milk bottle in your ordinance and whether these things are standard and that you can't take them unless they are standard. You have been talking about bottle tests being made by the City of Chicago. Let us take the actual product now.

The Master: Just a minute. Let us not have an
271 argument.

Mr. Gariepy: I am not having an argument.

The Master: Every time he makes an objection, you make a speech.

Mr. Gariepy: I didn't intend to.

The Master: Read the question.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Master: Q. If you know. Do you know?

A. It is not, as far as my opinion goes, accepted as a standard milk bottle.

Q. What? It is not what?

A. It is not accepted as a standard milk bottle, as far as my opinion goes.

Mr. Gariepy: Q. I ask you the same question with regard to Exhibit No. 27, which purports to be a pint bottle.

A. I don't know that there is any such standard as that in a milk bottle.

The Master: Q. A standard as what?

A. That that bottle may be considered a standard. In my opinion there is no standard or no evidence to show that is a standard milk bottle. In other words, I don't know what a standard milk bottle is. If you ask me whether or not that is a recognized standard milk bottle, in my
272 opinion it is not. It is a milk bottle, but not necessarily standard.

Q. It is a milk bottle?

A. It is a milk bottle, yes.

Q. If it did not have any milk in it, you would recognize it as a milk bottle, wouldn't you?

A. I would recognize it as a milk bottle, yes.

Mr. Gariepy: Let the record also show that both of these are marked at the top "Grade A, Pasteurized Milk, Devine's Dairy. To Be Sold Before Noon Friday," which the ordinance requires to be on the caps, and the same applies to Exhibit No. 26.

Q. Now, Doctor, have you made tests concerning bacteria count in caps, such as the caps you see on those two exhibits, Nos. 26 and 27?

A. Yes.

Q. And what did those tests show concerning bacteria count in the caps?

A. The bacteria count in a cap board is substantially the same as the bacteria count in a milk container board.

Q. Would the fact, Doctor, that the same material that is in the cap would reach all the way around this bottle and give it the circular or whatever shape this may be, would that in any way cause the bottle or the receptacle to
273 be more dangerous to public health, in your opinion?

A. No. These are made out of the same material, Master, as this bottle.

The Master: Q. The bacteria count on the inside of the

paper board cover is something you have ascertained, is that correct?

A. Yes.

Q. Have you ascertained also the bacteria count on the inside of the glass bottle?

A. No; not under comparable conditions. Just the cap.

Q. Just the cap?

A. Yes.

Q. We will say the inner surface of one of these paper containers would be in area ten or fifteen or twenty times as much as the area of this milk bottle cover. Wouldn't that mean around 20 times as much bacteria?

A. It might mean an added bacterial count, but the general quality of the board would be the same by bacteriological test.

Q. What I am trying to get at is this: If the bacterial count on the inside of the bottle per square inch is less than the bacterial count of a square inch of paper cover, then a quart paper container would be higher in bacterial count than a quart bottle container, wouldn't it? Do I make 274 that clear?

A. Not exactly, sir.

Q. Here you have a quart paper container. Here you have a quart bottle container?

A. Yes.

Q. Now, if the glass, the inside of a bottle has less bacterial count than the paper cover, then would it follow that the whole glass bottle would have less bacterial count than the whole paper container?

A. I see what you mean.

Q. The assumption would be that the paper container would have as much bacterial count per square inch as the paper cover of the bottle?

A. That would depend somewhat upon the moisture-proofing. If that were moisture-proofed—

Q. Indicating the paper container?

A. Indicating the paper container. If that were adequately moisture-proofed, it would not follow at all, because there might be no organisms on the inside at all, while there might be some trapped in the board. There might be some trapped in here, which may be paraffined over, and that would make it essentially a sterile container. If this were treated the same way—

Q. Referring to the milk bottle?

A. Yes.

275 Q. The cover or the bottle?

A. The cap.

Q. The cap?

A. It would be sealed off exactly as the bacteria in the board. So that does not necessarily follow. It depends on the efficiency of the paraffin on this container.

Q. Let me put it this way: Assuming that the inside of the paper cover of the glass bottle were paraffined, you would find a bacterial count on the inside of that paper cover, wouldn't you?

A. You might find a bacterial count on the inside, yes.

Q. Assuming now that you had a quart paper container, paraffined to the same extent as the inside of the paper cover of the glass bottle; in other words, you would have the same bacterial count per square inch of the paper container as you would have of the paper cover of the milk bottle?

A. Yes.

Q. Would you say that in your ordinary experiments or under ordinary conditions you would show a higher bacterial count by merely multiplying per square inch found on the inside of the paper cover of the paper container as there would be on the inside of a glass bottle, is that correct?

276 A. Not exactly.

Q. Here, say, you have a bacterial count on the inside of the paper cover.

A. Yes.

Q. Then the inside of a quart paper container is just so much more in area as the inside of this paper cover of a glass bottle?

A. Yes.

Q. Now, it is just a mere matter of multiplication to see what the bacterial count would be on the inside of the paper container?

A. Yes.

Q. If the paper cover of a glass milk bottle contains more in bacterial count than the inside of the glass milk bottle, then it would follow that if the paraffining is about the same the inside of the paper container would have a higher bacterial count than the glass bottle, wouldn't it?

A. Yes, granting that we know what the bacterial count of the paper is and all that is under control.

Q. If your primary assumption is correct, that the inside of the paper cover of the glass bottle contains a higher bacterial count per square inch than the inside of the glass bottle, then the other would have to follow, wouldn't it?

277 A. It would have to follow.

Mr. Rall: But this is on the paraffin. His testimony about this cap, his testimony that this cap had a greater bacterial count than the glass was on the assumption that it was not paraffined.

The Master: Q. Is that correct, Dr. Sanborn? Is the inside of this paper cover of the glass bottle paraffined?

A. It is not paraffined. It is impregnated with paraffin.

Mr. Rall: Is it at this time?

The Witness: Yes.

Mr. Rall: With paraffin?

The Witness: Yes.

Mr. Rall: Then I am wrong about that. Professor Tanner has done a lot of work on that, I think perhaps more than Dr. Sanborn has.

Mr. Gariepy: You can take the cap off.

The Witness: You can see the paraffin on there.

The Master: Yes, he says there is paraffin.

Mr. Gariepy: Let the record show that the witness took off the cap from the bottle.

Q. Doctor, is the amount of bacteria that is found on the inside of that paraffin cap or hood that you are putting back, of a harmful quantity?

278 A. No.

Q. Suppose you had the space or area of fifty of these contained in Exhibit No. 2, would the fifty multiplied be a quantity harmful to health?

A. No.

Q. With regard to Exhibits 26 and 27, do you know whether these are commonly accepted receptacles, the same as these bottles or containers shown in Exhibits 13 and 14?

A. Commonly accepted, yes.

Q. Doctor, are there any liners used in paper containers made of second grade stock, such as you described yesterday, for breakfast foods, and so on?

A. Paper containers for milk, you mean?

Q. No.

A. Referring to this?

Q. No. Are there liners used in containers made out of

second grade stock, we will call it, not prime stock, not virgin spruce pulp?

A. Yes.

Q. And what is the object of those liners?

A. The object of a liner is to serve as a filler.

The Master: Q. What do you mean by a liner, Dr. Sanborn? Can you tell me what is a liner?

A. This is built up in layers.

Q. What?

A. In layers.

279 Q. Yes.

Mr. Schaefer: I can't hear him.

The Witness: A. In the container he speaks of, there is a filler on the inside, the middle part of the container, and there are liners on the outside of the filler, so you have three layers, two outside layers and a middle layer, which is a filler.

The Master: Q. Which is the liner?

A. The liner would be the two outside layers. Then you have a bottom liner and a top liner.

Mr. Gariepy: Q. Are those liners made of virgin spruce pulp?

A. Yes.

Q. Are you authorized or now engaged by departments of health of various cities to make sanitary inspections and investigations of paper mills and paper blanks before they use the products from the blank in milk containers?

A. I am authorized by departments of health to conduct investigations along those lines.

Q. Is the water supply a problem in question at the Cherry River Paper Company, or where the Pure-Pak container raw material is made?

A. No.

Q. Counsel asked you yesterday considerable about 280 slime. Has it any sanitary significance, Doctor?

A. It has a significant effect on the final bacteriological count of the finished product, that is, of the paper board.

Q. Have you in your tests and research at the Cherry River Paper Company found that slime entered into the question of the fitness or the unfitness of the paper board?

A. No.

Q. What is this question of water supply that Mr. Schaefer asked you about extensively yesterday, at the

mill? What is the water supply? What do you mean by it?

A. The source of the processed water used in the manufacture of paper, paper and pulp.

Q. What is it at the Cherry River mill in question?

A. It is a river called the Cherry River, fed by mountain springs arising in a national forest in West Virginia.

Q. Is this water treated and tested before it is used in the mill?

A. Yes.

Q. Do you know whether the Cherry River Paper Company have a laboratory there for the purpose of performing research work and testing?

A. Yes.

281 Q. Are you acquainted with its equipment and facilities?

A. Yes.

Q. Is it, in your opinion as an expert and analyst, chemist and so on, a well-equipped laboratory for performing tests on paper board?

A. They have an adequate setup for such work.

Q. And how long, do you know, have they had such equipment and such a setup?

A. They have had such a setup for at least a year, and within the last four or five months it has been much improved.

Q. At whose suggestion, if you know, were the improvements made?

A. The improvements were made at the suggestions made by me.

Q. And is broke and trim used in the virgin spruce pulp turned out as a finished product by the Cherry River Paper Company?

A. Some broke is used.

Q. Have you been able to detect any higher bacteria content in that paper board turned out where broke is used?

A. No, sir.

Q. With regard to this Syracuse letter that you were cross-examined about at length yesterday, will you
282 explain the circumstances under which you made that address shown in the Syracuse letter that counsel read from on your cross-examination; who were you addressing and who were the parties present?

Mr. Schaefer: So that I can understand the question, what Syracuse letter are you referring to?

Mr. Gariepy: You referred, counsel, to a letter that the Doctor wrote here, which has been circularized, concerning the matter of the water supply being of importance in the making of the paper board.

Mr. Schaefer: I do not remember that I referred to any letter.

Mr. Gariepy: Oh, yes, you did.

Mr. Schaefer: The record will show if I did. If you are willing to rely on that identification, it is all right with me.

Mr. Gariepy: Q. Doctor, was not that an address at a convention in Syracuse, the Empire State convention, held there?

A. Counsel referred to a manuscript.

Q. Then that manuscript that was prepared in connection with that convention, was that in connection with the manufacturing of paper board made out of virgin spruce pulp?

A. No. They were manufacturers of miscellaneous 283 papers.

Q. And by miscellaneous papers, what do you mean, in regard to the pulp in question in this lawsuit?

A. I mean that the representatives present were makers of various types of pulp and paper differing from the type in front of me.

Q. Differing in quality and texture and sanitary aspects?

A. Differing in general characteristics.

Q. Will ink spots show up on a paper board made of used containers and of material used once and delivered to the consumer?

A. Yes.

Q. And how will they show up? Explain that to the Master.

A. Ink spots and the other materials that go along with ink, such as matter present in a reused, old container, show up in the form of spots, some of which are ink and foreign fibre and discoloration.

The Master: Q. Show up where?

A. You can tell by looking at this. This is not a good example, because it is paraffined. But a flat piece of paper board would show it. An old board that might have been

used on. Instead of a nice white surface it would show spots of ink.

284 Q. You mean, if they should take some of this board and try to rework it into new board; is that what you mean?

A. Yes, or any other type of old container boards, such as breakfast food cartons.

Q. Unless they would take the outer layer containing the ink off before using that?

A. Yes, because most of it is due to ink.

Q. I mean, yesterday you thought or you said that the ink attaches only to the outer layer.

A. The outer layer, yes.

Q. And if they should take off the outer layer and then use the rest of the paper container in reworking, there wouldn't be any ink, would there?

A. No. It would be difficult to detect any difference.

Mr. Gariepy: Q. Is that feasible to do, Dr. Sanborn?

A. No.

Q. The letter I had referred to and described as the Syracuse incident is Defendant's Exhibit 2, which I show you here photostated. Is that the letter, Doctor?

A. Yes, that is a manuscript.

Q. Doctor, is it feasible, in your opinion, to strip the paper down, as the Master just asked you about, take

285 off the outer layer containing the ink, and using the inner layer, which you say the ink did not penetrate?

A. It is not feasible.

Q. Why not?

A. It is not economically feasible.

Q. Has your investigation and research work at the Cherry River Paper Company ever revealed to you any instance where spores were brought into the mill by the employees?

A. No.

The Master: What are spores?

Mr. Gariepy: Q. Explain to the Master what that is.

A. I mentioned that yesterday. Spores are similar to seeds. They are produced in fungi and are means of reproduction.

Q. Seed growth?

A. Yes.

Q. Doctor, have you found a condition of slime supply or built up slime in your examination of the Cherry River pulp mill during the past two years?

A. No.

Q. Have you looked for such a condition?

A. Yes.

Q. Have you found any condition of polluted water supply at the Cherry River mill in question?

286 A. No.

Q. Have you looked for it?

A. Yes.

Q. Have you ever found, seen or observed about The Cherry River Paper Company in all of your experience and observation there any decomposed paper or moulded wood?

A. No.

Q. Have you had any occasion to complain of a purported slime supply at the Cherry River mill?

A. No.

Q. Have you performed any tests on Plaintiff's Exhibit 2, the paper container, for absorption?

A. Yes.

Q. When and where?

A. These experiments on absorption are running along now and is a continuous experiment running through the year.

Q. What did you find concerning absorption, after, we will say, ten houfs, of the paper containing milk? What absorption did you find?

A. The average absorption was found to be in two or three centimeters in the surface fibre of the interior of the container.

Q. And there are 946 cubic centimeters in a quart bottle?

A. Yes.

Q. Have you ever had any objection raised by pub-

287 lic health officials of cities and villages or public health departments concerning that amount of absorption in the container in question?

A. No.

Mr. Schaefer: That is objected to as completely immaterial, and I move to strike the answer.

The Master: I will let it stand.

Mr. Gariepy: Q. What problems of mill sanitation did you find existing at the Cherry River Paper Company at the time of your respective visits? Take the last one, in February, 1939.

A. I made several suggestions.
Q. Were they followed out?
A. Yes.
Q. Are they in force and carried out today?
A. Yes.
Q. Was white water ever used at the Cherry River Paper Company mill?
A. The Cherry River Paper Company mill may use a small amount of white water.
Q. And is that, in your opinion, dangerous to the finished product?
A. No.
Q. For what reason, Doctor?
A. Because they chemically treat it and render it sterile.
The Master: Q. What is chemically treated? The white water?
288 A. Yes.
Mr. Gariepy: Q. With regard to the calendar stacks, did you ever find any slime accumulation about the calendar stacks of the mill in question?
A. No.
Q. Or at the water boxes?
A. No.
Q. Explain to the Master where the calendar stacks are at the machinery in the mill?
A. The calendar stacks are after the sheet has been formed, it has got a rough surface. It then goes to be ironed out, as a housewife irons a white dress, sprinkles it with water and gives it a gloss, in the same way the sheet receives a gloss, by being ironed out and treated with water and then is run through a calendar or metal roll, to give it such a gloss. The water boxes are receptacles wherein the water is transferred to the sheets.
Q. Has that any effect on the water-proofing?
A. No.
Q. When this paper board is finished and before any paraffin is applied, it has a certain condition called sizing, does it?
A. Yes.
Q. Is it a water-proof or non-moisture-proof condition?
A. Sizing is a water-proofing treatment.
289 Q. And is that commonly done on all paper board turned out at this plant?

A. It is commonly done.

Q. And is it in vogue at all places where virgin spruce pulp is used for the making of paper board?

A. It is generally used in all mills.

Q. Would you say, in your opinion, that this paper then is substantially water-proofed before the paraffining and after it has come out of the roll with the sizing?

A. It is substantially water-proofed to the extent of being water-repellent and will contain satisfactorily liquids or semi-liquids for a certain length of time.

Q. You were asked something about this, Doctor. Will you say, Doctor, supposing milk is delivered at seven o'clock in the morning, how long it would retain that condition of water-proofing?

A. In such a container that was not coated with paraffin?

Q. Yes, unparaffined container.

A. I have done no experiments on that. It would be my opinion that I would express.

Q. What is your opinion?

A. I have seen the thing done under practical conditions. I have seen milk delivered in such a container,
290 delivered in such a container, and my opinion is, from my knowledge of that condition, that it would probably be in fit condition for a half a day or more, perhaps 24 hours.

The Master: Q. That would be the condition of the milk or the container?

A. The container.

Mr. Schaefer: That answer was not responsive, if the Master please.

Mr. Gariepy: A half a day is the answer.

Mr. Schaefer: The question was whether or not there would be absorption. The answer was whether the container would be in fit condition.

The Master: Q. Would there be any absorption in a half a day?

A. There would be absorption. I understood the purpose of the question was to find whether there might be failure of the container so it would no longer be a satisfactory receptacle for holding milk.

Mr. Schaefer: You mean collapsed?

The Witness: Yes.

Mr. Gariepy: Q. Did you ever find any condition of collapse after a half a day or a full day of such a container so used?

A. No.

291 The Master: Q. But there is the absorption?

A. There is a gradual sinking in.

Q. That is, after the paraffin?

A. No, this is before the paraffin.

Q. I mean, would that condition exist even though there is paraffin?

A. No. If it is paraffined there would be no penetration of milk into the container.

Q. None at all?

A. If properly paraffined, no.

Q. You said something about one cubic centimeter this morning?

A. That is taken up by the outside layer of fibre, that is, the fibre in direct contact with the milk.

Q. Does the paraffin cover those fibres?

A. It would cover the fibres if we got a low enough temperature of paraffin. As I gave my testimony this morning, if the temperature is around 160 to 170, the chances are very good that you are going to leave a surface coating of paraffin over the fibres, but if there should be a high temperature of paraffin some of that might run off, so it would leave an exposed space.

Q. Take this Exhibit No. 2. Does that have some of the fibres that might absorb some of the milk?

292 A. That is undoubtedly there. There would be some fibres in there that would be exposed.

Mr. Gariepy: Q. What amount of absorption, Doctor, have you found, in your experience in the trade, and in your research work, is accepted as satisfactory to the industry in the sale of milk in these containers?

Mr. Schaefer: That is objected to. What is acceptable to the industry is of no interest here.

Mr. Gariepy: Well, the City of Chicago is not free from everything, counsel.

The Master: Just a minute. I will sustain the objection.

Mr. Gariepy: Q. Doctor, have you ever had any complaints concerning this amount of absorption, that you have testified to, that was found by any of the cities or villages shown on Exhibit No. 24?

Mr. Schaefer: That is objected to.

The Master: I will sustain the objection.

Mr. Gariepy: Q. Is there any of this absorption, Doc-

tor, that you have found in your tests and research work that is dangerous or detrimental to health?

A. No.

Q. Or to the consumers of milk?

A. No.

Q. Will you tell the Master why it is not dangerous?

A. Because the paper board used is essentially sterile.

293 Q. If it did absorb it, there is nothing to come out?

A. Correct.

Q. No bacteria to come out?

A. Yes.

Q. And whatever is in has been sealed in by the paraffin?

A. Yes.

The Master: Q. If there is paraffin there and there is absorption, does the moisture give vitality to those bacteria, and fertility?

A. That might happen. That might well happen, if there was a sufficient number of organisms.

Q. That is to say, the absorption might increase whatever bacteria already were present in the paper board?

A. But at the temperature at which the container is held when filled with milk, it would prevent any such propagation. Theoretically it is possible for the organisms to grow, but not with the temperature at which it is held. The refrigeration temperature is too low.

Q. At which it is held with milk in it?

A. Yes.

Mr. Gariepy: Q. Concerning the growth of any bacteria, would not bacteria grow in a glass bottle, such as Exhibits 26 and 27, if exposed to the heat?

A. Yes.

294 Q. The same as in Exhibit No. 2?

A. Yes.

Q. And it would be in there, if there was anything for it to feed on, just as it would in the paper container?

A. Yes.

Q. If you find this bacteria in there existing at a low temperature, would it be harmful or harmless?

A. Harmless.

Q. Have you in your experience at the Cherry River Paper Company here ever found any use or evidence of use of ground wood pulp or chemically treated pulp for container board?

A. Not for container board, no ground wood. Of course, sulphite pulp is chemical pulp.

Q. What is the quality and is that made by the same process as described on direct examination?

A. Yes.

Mr. Gariepy: Mr. Reporter, will you mark this drinking cup, paper drinking cup, as Exhibit No. 28.

(The paper drinking cup referred to, was thereupon marked by the reporter Plaintiff's Exhibit No. 28 for identification.)

Mr. Gariepy: Q. I show you what purports to be an ordinary paper cup, marked Plaintiff's Exhibit No. 28
295 for identification. Will you look at this Plaintiff's Exhibit 28, which purports to be a drinking cup and tell me what stock or material that is made out of?

A. That appears to be sulphite pulp.

Q. Is that the type of cup that is commonly used at soda fountains and drinking places?

A. Yes.

Q. Where you buy drinks in cities and villages?

A. Yes.

Mr. Schaefer: That is objected to as immaterial.

The Master: Let him answer.

Mr. Gariepy: Q. Is that paraffined?

A. Yes.

Mr. Gariepy: Will you mark this ice cream container Plaintiff's Exhibit No. 29 for identification.

(The ice cream container referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 29 for identification.)

Mr. Gariepy: Q. What about the cap on Exhibit No. 28, is that paraffined, or is that just plain?

A. That has no coating of paraffin.

Q. On the inside?

A. Yes, it is treated with paraffin.

Q. On the inside?

A. Of the cap?

296 Q. Yes.

A. Yes.

Q. Will you look at Exhibit 29, which purports to be an ice cream container, and tell me what kind of stock that is made out of?

A. Prime stock.

Q. And that is the type of container that is commonly

used, as you have observed, throughout the United States, in the sale of ice cream at soda fountains and stores?

A. Yes.

Q. And is that waxed and paraffined?

A. Yes.

Q. Do you find anything detrimental in the use of either of these two containers for the sale of liquids or ice cream?

A. No.

Mr. Schaefer: That is objected to.

The Master: Overruled.

Mr. Gariepy: Q. Is ice cream a milk product?

A. It is a dairy product, yes.

Mr. Gariepy: Mr. Reporter, will you mark this cottage cheese container as Plaintiff's Exhibit No. 30 for identification.

(The container referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 30 for identification.)

297 Mr. Gariepy: Q. Will you look at Exhibit No. 30, Doctor, which purports to be a cottage cheese container. Have you ever seen those before?

A. Yes.

Q. What type of material is that made out of, with regard to prime stock or secondary stock?

A. It is made out of prime stock.

Q. And is that the type of container that is commonly used throughout the country, as you have observed, for the sale of cottage cheese, at stores and soda fountains and so on?

A. That is the common type.

Q. Is that paraffined?

A. Yes.

Q. Have you any idea from looking at that as to the temperature of the paraffining? Just give your judgment as to what kind of a job that shows. It is paraffined on the inside, too, Doctor.

A. Yes, I know it is. I was trying to see how well. This is a regular laboratory experiment. That was paraffined. I would guess, in my opinion, at approximately 175 or 180 degrees Fahrenheit.

Mr. Gariepy: If the Master please, I picked this up at Walgreen's.

The Master: Q. Would you call that a standard?

A. It is the general type that is encountered in
298 many stores. It varies somewhat in shape.

Q. That is about as standard as the milk bottles?

A. That is right. They vary in shape a little bit. Some are more squatty, and so forth, but it is one of the type you find generally.

Mr. Gariepy: I secured that this morning at Walgreen's, at nine o'clock, if you want to know where it came from.

Mr. Schaefer: I am not interested.

Mr. Gariepy: I know, but if you want to know where it came from. It is from Bowman's, used in the city.

The Master: Do you want that in as evidence?

Mr. Gariepy: No. If there is any question about it, I just want that in.

I am going to offer Exhibits 26, 27, 28, and 29, counsel.

Mr. Schaefer: Where do they belong?

Mr. Gariepy: The big bottle is Exhibit 26, the small bottle is Exhibit 27, and the containers or cups are 28, 29 and 30.

Mr. Schaefer: I have no objection to the admission of Exhibits 26 and 27. I object to the admission of Exhibits 28, 29 and 30, on the ground that they are immaterial.

The Master: Overruled.

299 (The glass and paper containers so offered and received in evidence, as heretofore described, were marked PLAINTIFF'S EXHIBITS 26, 27, 28, 29, and 30, respectively, and are attached hereto and made a part hereof.)

Mr. Gariepy: Mr. Rep ter, will you mark this paper container the next exhibit number.

(The paper container referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 31 for identification.)

Mr. Gariepy: Q. Will you look at Plaintiff's Exhibit 31 for identification, Doctor, and tell me whether you have ever seen that before.

A. Yes.

Q. And how often and where?

A. I have seen this container very frequently, or rather frequently, at milk plants, and I have seen it manufactured.

Q. Do you know whether that type of container is in use today?

A. Yes.

Q. In the sale of milk at retail?

A. Yes.

Mr. Schaefer: That is objected to as immaterial.

The Master: Overruled.

Mr. Gariepy: Q. Where, Doctor?

A. It is used at a great many small milk plants 300 throughout the country.

Q. Is it used by Borden's, who purport to own that container or put it out, in the east, in Baltimore?

A. It has been used by Borden's.

The Master: Q. In the east?

A. Is the address, counsel, of the particular branch on here?

Q. What is your recollection as to where you have seen it used?

Mr. Gariepy: Q. Well, do you remember seeing this type of container used in cities and villages?

A. I have seen it used in New York City.

Q. Is this made out of virgin spruce pulp, the same as Plaintiff's Exhibit No. 2?

A. There is virgin spruce pulp in that container, and there is also ground wood, which is prime pulp.

Q. And is it waxed in a similar manner that you described the Ex-Cell-O machine waxed Exhibit No. 2?

A. It is waxed in a similar manner, by spraying. The objective is the same.

Q. And that wax is applied by forced air blowing a spray on it, by machine?

A. Yes.

Mr. Schaefer: If the Master please, I object to that question. That is a type of milk container which is 301 not involved in this litigation.

The Master: You mean this one, Exhibit 31?

Mr. Schaefer: Yes.

The Master: I will let it stand.

Q. I notice that when this exhibit is handled the paraffin comes off.

A. Yes, a little oily surface.

Q. Does not some of that oil get into the milk?

A. I conducted no experiments on that. There is no difference in the taste of the milk.

Q. I just asked you the question. I noticed when I handled this Exhibit 31 some oily substances seemed to cling to the fingers.

A. The heat of the hand undoubtedly is responsible for that.

Q. Just touch it and a little bit of friction gets an oily substance on to the hand. I was wondering if some of that oily substance gets into the milk when there is friction on the inside.

A. There is no indication that has come to me by experimentation or report that takes place.

Mr. Gariepy: Q. Is there anything in that oily substance that the Master has referred to, Doctor, that is dangerous to health?

A. No.

302 Q. Does it change the taste of the milk any? Have you had any experience in that?

A. No, there is no evidence that it changes the taste of the milk.

Mr. Gariepy: I will ask the reporter to mark this large paper container as Plaintiff's Exhibit No. 32 for identification.

(The large paper container referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 32 for identification.)

Mr. Gariepy: Q. Will you look at that, Doctor, and tell the Master what that is?

A. This container is called a bulk can or a fibre can for the wholesale distribution of ice cream.

Q. Of what type of pulp or wood material is that made?

A. This container has a liner of price sulphite stock and it has a filler of high grade inside materials, of the nature of secondary stock.

Q. And how extensive is the use of Exhibit 32, to your knowledge and from your experience?

A. This type of container is used very widely around metropolitan areas in New York City and Boston and Philadelphia.

Q. Is there any health problem involved in the use
303 of that container in the sale of ice cream, with the liner you described?

Mr. Schaefer: That is objected to.

The Master: Overruled.

The Witness: A. No.

Mr. Gariepy: Q. And is the outside of that paraffined?

A. No.

Q. The lining on the outside takes the place of the paraffining?

A. Yes.
Q. And that liner is of prime stock?
A. Yes.
Q. And is that liner of the same quality as Exhibit No. 2?
A. Yes.
Q. In regard to the Master's inquiry, I think, of yesterday, about cutting down Exhibit No. 2 and reusing it, are there other sizes, other than the quart so shown in Exhibit 2?
A. Yes.
Q. Have you ever in your experience in your research work, found any attempt to assimilate Exhibit No. 2 by cutting it down in size and putting on another gable roof?
A. No.
Q. Is that practically possible, Doctor?
A. In my experience, it is practically impossible.
Q. Will you tell the Master why?
304 A. It would be practically impossible, in my experience, to do such a thing without defacing and mutilating the container in such a way that it would not be able to serve its purpose.
Q. Would such an attempt at assimilation or changing the original container be easily observed by the purchaser, consumer or the dealer or whoever may get it?
A. Yes.
Mr. Gariepy: Off the record, please.
(Discussion outside the record.)
Mr. Gariepy: I offer Exhibits Nos. 31 and 32.
Mr. Schaefer: I object.
The Master: They may be received in evidence.
(The paper containers referred to, so offered and received in evidence, were marked PLAINTIFF'S EXHIBITS 31 and 32, respectively, and are attached hereto and made a part hereof.)
Mr. Gariepy: Q. Are you acquainted, Doctor, with the matter of adhesive or glue that is used to seal the bottom of this Exhibit 2 here?
A. Yes.
Q. And what is the chemical constituent of the said glue or adhesive?
305 A. Those adhesives are either starchy in nature or contain casein, and a certain chemical reaction set up, and then a preservative is added.

The Master: We went into this thing yesterday. No question was raised about it on cross examination.

Mr. Schaefer: Not that I recall.

Mr. Gariepy: All right, I will withdraw it. It may be physically stricken, as far as I am concerned, Master.

The Master: Well, leave it in there.

306 Q. Doctor, how many years has the paper container, as testified to here by you, the virgin spruce pulp, been in use that you know of in other cities and villages; what is the earliest date?

Mr. Schaefer: That is objected to on the ground that there was direct testimony to that effect and the matter was not broached on cross-examination.

Mr. Gariepy: I don't remember.

Q. What time did you say, Doctor,—was it 1906?

A. Yes, sir.

Q. Has there been, in your experience and in your observation any advancement in perfecting the type of material, since 1906, used in turning out finished products such as Plaintiff's Exhibit 2?

A. Yes, sir.

Q. In what way?

A. In the matter of bacteriacidal control and in the matter of bacteriological control; that is the greatest development so far as the quality of material is concerned.

Q. Doctor, do you know of any rule or regulation of the United States Public Health Service with regard to the quality of the paperboard used in single service containers?

A. No.

307 Q. Has the United States Public Health Service spoken on said subject?

A. No.

Q. Does the city of Washington, D. C., where the United States Public Health Service is located, use the single service paper container?

A. Yes.

Q. Do you know the officials of the United States Public Health Service, Dr. Parran?

Mr. Schaefer: That is objected to as immaterial. What is the reason for it?

The Master: Read the question.

(The question was read by the reporter.)

Mr. Schaefer: What if he knows or doesn't know? What is the materiality of it?

Mr. Gariepy: That he is not talking about something in theory and as to the rules and regulations and so forth if he knows them, and he knows the man that dictates their policy and standards, if he knows or doesn't know.

The Master: He knows—go ahead.

Mr. Gariepy: Q. You do know?

A. Yes.

Q. What are the purposes of mill sanitary surveys or inspections, Doctor?

308 A. The purpose of mill sanitary surveys or inspections are twofold: First, to investigate the sources of contamination of a mill in order to aid that mill in making certain economic savings; and, secondly, to inspect that mill for the purpose of improving the sanitary condition of their product.

Q. How often have you made such inspections and do you make such inspections for municipalities permitting the use of the single service container?

Mr. Schaefer: That is objected to.

The Master: Overruled.

Mr. Schaefer: Sir?

The Master: Overruled.

Mr. Schaefer: But I object to the form of that question.

Mr. Gariepy: For municipalities.

The Master: What is wrong with that question?

Mr. Schaefer: Does he make any? It is evidently leading.

The Master: I overruled the objection. He makes them or he doesn't.

Mr. Gariepy: That is right.

Q. If you don't make them, you can say so.

A. I make inspections more or less regularly.

Q. Do you mean quarterly or semi-annually?

309 A. I usually make inspections when I consider them necessary.

Mr. Schaefer: Q. Those are for municipalities, in response to the question asked?

A. Indirectly I am not sent there by the municipalities but in any case, or in many cases, the municipality asks me subsequently what I found.

Mr. Gariepy: Q. And do you report to them?

A. I report to them, when I receive the permission of the mill in the instance, that one in question, as that ma-

terial is confidential and I would not divulge that without the permission of the mill.

The Master: Q. Who asks you to go in there—the mill?

A. The work being authorized by the Department of Health, yes; that is part of my work.

Q. Why is it confidential with the mill?

A. Concerning things I observe that may have to do with policies and practices that are characteristic of the secret to the mill in question.

Q. I want to get this right. You are asked by a municipality to make an inspection?

A. Yes, sir.

Q. And theoretically, at least, you are doing that work for the municipality?

A. Yes.

310 Q. And why shouldn't you convey to the municipality the results of your investigation?

A. I am sorry I did not make that quite clear, Master. I report everything to the health authority having to do with the sanitation or the public health aspects of that mill, but in the course of our work there are other points which are not bearing on public health which I, of course, do not divulge. I did not make it very clear, I appreciate.

Mr. Gariepy: Q. Will you give us some examples in your experience when that has been done by you and is being done?

Mr. Schaefer: That is objected to.

The Master: I will let him answer. You may answer it if you want to.

Mr. Gariepy: Q. My point is to bring out anything that you consider confidential and things that you consider the Health Department of the city or village should know about.

A. I see. I go to a mill to make a survey and make bacteriological counts throughout the system, of the water supply, of the stock at focal points throughout the system and of the final product. I make inspection of the mill to see that the general sanitation is satisfactory.

311 I observe, in the course of my visit to the mill, that they have a very satisfactory way of achieving sterility, or a new or a different method of bacteriacide control. In making my report to the health officials, I report the sanitary conditions as I found they were with reference to the method of achieving a certain goal.

The Master: Q. Who pays you for this work?

A. In the case of that mill, I get my traveling expenses plus hotel bill.

Q. From whom?

A. From the mill that receives the survey.

Q. Isn't this survey made at the request of the city, for its own police purposes?

A. No, it is not that understanding. It hasn't gone that far. My understanding has not gone that far. The work is authorized by the Health Department but it is research information that we are accumulating and the real purpose of the survey is to tell the mill what it must do, what it should do in order to make a satisfactory product.

Q. Who asks you to go there, the mill, in the first instance, or the city?

A. The mill, in the first instance, asks me to go.

Q. Then why do you have to see the city about it?

312 A. I don't have to see the city about it unless I am requested for a report, which often happens, by the city, as to what I found.

Q. Why do you use the expression "authorized"?

A. Authorized is the proper term for explaining my original relationship to the Health Department in the investigation I have been conducting; it has been authorized by the Department of Health of New York City and the Department of Health of New York State for the purpose of securing information and research data on the subject of sanitation of paper containers for it.

Mr. Gariepy: Q. In these reports and investigations are you given any compensation as to whether your reports are favorable or unfavorable to the mill?

A. No.

Q. Do you receive any remuneration concerning the type of report?

A. No, sir.

Q. Does the type of report depend on whether your fare is paid or your expenses are paid?

A. No, sir.

Q. Such things as you obtain in the investigation of these mills and research, is that public information for any health department that writes you about that mill?

A. It is open for the inspection of the health au-

313 thorities so far as sanitation is concerned.

Q. Can the condition of paperboard be indexed as

to its sanitary condition, that is, sanitary condition of the mill?

A. Paperboard may be a sanitary index of the mill, or, rather, an index of the sanitary condition of the mill.

Q. Is a survey needed in order for that to be brought out?

A. Not necessarily.

Q. Counsel asked you this morning, quoting that I purported to testify as to disintegration tests. I was not attempting to testify, Doctor. Did you explain in detail that disintegration test of paper and the reasons for it?

A. Yes, I did.

Mr. Gariepy: Mr. Schaefer read it this morning and stated that Mr. Gariepy said disintegration was so and so, and I said I was trying to give the witness words to reframe it, but I was not testifying and I didn't want you to think I was trying to tell you what the testimony should be on that.

You may recross, Counsel, if you want to, before we go into this matter on the details.

The Master: Let's finish with the witness first.

Mr. Schaefer: Is that all of the redirect, Mr. Gariepy?

314 Mr. Gariepy: Yes.

Recross Examination by Mr. Schaefer.

Q. Doctor, I understood you to say that, to determine whether or not a mill is adhering to a program of microbiological control, some effort in addition to the effort required in making disintegration tests was necessary?

A. That is very often true, if I might enlarge upon that a bit, Master. Referring to the mill we have been discussing, as long as the matter goes on in the way it has been preceding, and the count continues to be satisfactory, I don't consider it necessary to make inspections of that mill.

Q. Ever?

A. Unless some emergency arises; unless there should suddenly be some emergency arise or some reason, and then I want to go there and make a personal investigation.

Q. During your cross-examination this morning, Doctor, I showed you the second row of milk containers on exhibit, Plaintiff's No. 13?

A. Yes.

Q. You testified that those were in your opinion cups?

A. Yes.

315 Q. Do you want to change that testimony?

A. Yes, Master. I have been thinking so long in terms of paper that when I see a thing of that shape I state "paper cup.". I mean it has the appearance of a tumbler.

Q. You testified a moment ago that white water could not contain pathogenic bacteria under normal conditions?

A. Yes.

Q. If pathogenic bacteria were present in white water, would they survive?

A. Pathogenic bacteria present in white water would not survive white water.

Q. Why is that, Doctor?

A. In the first place, the acid content of the white water is so great that it would be detrimental for proliferation; the environment is unsuitable for pathogenic bacteria.

Q. Will they die in white water or continue to live?

A. Pathogenic bacteria will die in white water.

Q. You spoke of some suggestions that you made with respect to sanitation in the Cherry River mill in February of 1939. What were those, Doctor?

A. The date perhaps is immaterial.

316 Q. Perhaps the date is wrong, but it was your last inspection?

A. Yes. Will you read that question, please?

(The question was read by the reporter.)

A. I suggested an increase in the chlorination setup of the residual chlorine. I made sanitary suggestions concerning the water box sanitation and I made sanitary suggestions concerning the mechanical handling of the finished paper.

Q. As opposed to what, manual handling?

A. As opposed to manual handling.

Q. What is sizing, Doctor?

A. Sizing is a resin treatment; there is a suspension of resin which is added to the pulp and with the addition of alum for the purpose of producing on the paper a resinate, and the resin acts as a moisture proofing agent.

Q. That is the only purpose of adding sizing?

A. Not only that, but it enables you to write on the sheet; if there was no sizing on it, you couldn't write on it,

and it can be written on and you can use it without collapsing.

Q. Doctor, with respect to Plaintiff's Exhibit 2, do you find the same, after handling that exhibit, the same oily feeling on your fingers that you found after you handled
317 Plaintiff's Exhibit 31?

A. Will you read the question, please?

(The question was read by the reporter.)

A. Yes.

Mr. Schaefer: That is all, Master.

Mr. Rall: Is there anything deleterious to help in that oily substance?

The Witness: No.

Mr. Gariepy: I will ask that these sheets be marked as Plaintiff's Exhibit 32 for identification.

The Master: It may be so marked.

(The document, containing several sheets, referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 32 for identification.")

Mr. Gariepy: May we proceed now with regard to this matter of these tests?

Mr. Schaefer: Are you through with the examination for the purpose of this case?

Mr. Gariepy: Dr. Sanborn?

Mr. Schaefer: Direct, cross, and redirect—is there anything further?

Mr. Rall: Maybe.

Mr. Schaefer: Let's finish with him.

Mr. Rall: This is part of it, then.

318 The Master: We will take a recess, gentlemen.

(A recess was taken.)

Mr. Schaefer: There is one more question I would like to ask the witness which I forgot:

Q. Doctor, when you examined this Plaintiff's Exhibit 31 at the request of Mr. Gariepy, I noticed that you picked it up and smelled it once or twice. Why did you do that?

A. That is a mechanical operation I go through in examining containers of any kind; when I have a specimen to look at, I usually go through a certain number of procedures such as that.

Q. Why did you smell it?

A. To see if I can detect any odor.

Q. What would the presence or the absence of odor indicate to you, Doctor?

A. By the type of odor I detect I might be able to

arrive at the reason for it. The reason why—and now I recall—excuse, me, Master, but it rather took me by surprise; I didn't remember I had done it when it was mentioned because it is an automatic process to me. I do recall that I did so.

The paraffin might have been overheated and on certain containers the paraffin is heated too hot and if it is heated too hot they are likely to detect certain products of
319 decomposition due to overheating.

Q. What temperature range will produce those products of decomposition?

A. I can give no definite answer to that, as to the temperature that might cause it.

Q. Can you give some temperatures that are certain?

A. Not only the temperature but the renewal of the paraffin is a factor there. If it is renewed, there will be less chance, even at high temperatures of heating any such off color. It is accompanied by a change in color as well as odor; it is a sign of breakdown, so that the renewal of the paraffin has an effect, if the paraffin bath—

Q. Excuse me. Let's see if I am clear: If you recoat that paraffin, you will cover the odor?

A. No.

Q. What do you mean by renewal of paraffin?

A. By changing the paraffin in the bath, cleaning the tank out and putting the thing through a spraying process, and you cannot detect any possible breakdown, but if you allow it to go two or three weeks and don't change it, it becomes in that condition and—

Q. That is in addition to the temperature?

A. Yes, sir.

320 Mr. Schaefer: That is all.

Mr. Gariepy: Q. Doctor, you noticed the quart bottle, Exhibit 27, which had the hood on it?

A. Yes.

Q. Did you notice any milk oozing out of the top of this?

A. Yes.

Q. Will you look at the table before you?

A. Yes, sir.

Q. Where does that milk come from?

Mr. Schaefer: I object to that.

Mr. Gariepy: That was sweating when we were right here, pouring out of the top.

The Master: I think we opened up one of those covers.

Mr. Gariepy: No. It was sweating and the milk running out on the table. I want to show the fact.

Q. Have you ever seen in Defendant's Exhibit 2 any milk oozing out of the top there?

A. No.

Q. With regard to this matter of these tests—

Mr. Schaefer: Just a minute, before we get into that, if the Master please. As I understand it, the matter of these tests is now before you for your ruling. If you think it is going to assist you to have the witness answer questions pertaining to these tests, I have no objection. I
321 don't believe that any record made pretaining to these tests should be a part of the record in this case or a part of the deposition because it don't tend to prove any issue in the case; but if you want to hear the testimony of this witness pertaining to that, if you want the reporter to take it, if the Master wants it.

The Master: This testimony is merely by way of anticipating the possibility that if the agreed inspections or experiments are not had and the city determines or decides to go ahead and conduct the experiment by itself, then this witness' testimony, conceivably, may be of some materiality.

Mr. Rall: That is correct, and if we reach an agreement, I don't see that there will be any need to write it up or put it in the record.

The Master: It may not be necessary to have it in unless you reach an agreement.

Mr. Rall: That is correct.

The Master: I don't see any use speculating as to whether they are going to do it or not. The testimony at the present time meets no issue, then.

Mr. Rall: That is right. That is my point.

The Master: And Mr. Rall thought the testimony might be taken down just as a matter of convenience but not
322 written up and possibly stricken out physically from the stenographer's notes as not being a part of the record.

I cannot see any objection in letting the stenographer practice.

(The testimony above referred to was physically stricken from the record.)

(Thereupon, the further hearing of the within cause was continued until 10 o'clock a. m. on the 5th day of June, 1939.)

323 • • (Caption) • •

Monday, June 5, 1939.
10 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy,
Mr. Rall.
Mr. Schaefer,
Mr. Horan.

324 The Master: Are you ready to proceed?
Mr. Gariepy: Yes.
The Master: Off the record.
(Discussion had off the record.)
Mr. Schaefer: Let us have the record show, if the Master please, that the defendants' right to cross-examine the witnesses is reserved and that the witnesses will be brought back for cross-examination at a future date.
Mr. Gariepy: Very well.
Mr. Rall: That is agreeable.
Mr. Gariepy: I will call Mr. Fisher.

HARRY C. FISHER was called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name?
A. Harry C. Fisher.
Q. Where do you live?
A. 6208 Beachview Circle, Cincinnati, Ohio.
Q. What is your business or occupation?
A. Chief chemist of the Gardner-Richardson Com-
325 pany in Middletown, Ohio.
Q. Of what schools are you a graduate?
A. I graduated from the University of Cincinnati in 1923, with the degree of Chemical Engineer.
Q. Any other school?
A. No, sir.
Q. What work have you been engaged in since your graduation in 1923?

A. Since that time I have been employed by the Gardner and Richardson people in their laboratories. Since about 1927 or 1928 I have been the chief chemist of the company.

Q. And what is your duties as chief chemist at the laboratories of the Gardner-Richardson Company at Middletown, Ohio?

A. As Chief Chemist I am responsible for testing raw materials, finished products, investigating processes, research developments and things like that.

Q. What do the Gardner-Richardson people make that you test and examine?

A. Among other things, the Gardner-Richardson people convert milk bottle board or so-called milk bottle board paper into the paper milk bottle.

Q. Have they what is called or what is known in the trade as a converting plant?

A. Yes.

326 Q. And are you connected with that converting plant?

A. Yes.

Q. And where is the laboratory that you work out of in connection with that plant?

A. Our main laboratory is at Lockland, Ohio, which is about 25 miles from Middletown. We also have laboratories in Middletown, too. They are scattered around.

Q. How long have the Gardner-Richardson people maintained these laboratories; first, the one in Lockland?

A. Since before I worked there. That is, before 1923 they had laboratories. Also they have had them in Middletown. I should explain this: That the Gardner-Richardson Company is a comparatively recently formed concern, of 1932, made of two parts, the old Richardson Company, whose paper business was purchased by the Gardner-Harvey Company, who are also paper manufacturers, converters. They were both in the same line of business and one bought out the other and formed this new company, so that up to 1932, I was with the Richardson Company, and from 1932 on with the Gardner-Richardson Company, working in the same laboratory.

Q. How many tons of paper a day do they convert
327 or fabricate?

A. I imagine they do about 1500 to 2,000 tons a week; something like that.

The Master: Q. What do you mean, that they convert?

A. Well, in the paper industry there are two operations. One is to make the paper in the form of sheets or rolls, and the second is to take that paper, convert it into something like these milk bottles would be, by the processes of printing, cutting, scoring, gluing and so on.

Mr. Gariepy: Q. Do you make any of this virgin spruce pulp paper board material that was testified to here by Dr. Sanborn last week?

A. We have not made any of this particular board, no.

Q. How long have you had the laboratory at the Middletown plant, how many years has that been set up in operation?

A. That has been in operation before 1932, many years.

Q. Have you set up a new laboratory in the last two months for the purpose of testing and making tests and doing research work on the paper board in question here?

A. Yes; within the last couple of months we have
328 set up a department specifically for bacteriological work of the simpler kind, on this particular board.

Q. Who is the head of that department?

A. The work is done under my direction by one of the men.

The Master: I might ask a question there.

Q. Just why are you interested in bacteriological experiments on paper that has already been manufactured by somebody else?

A. Well, it comes under the heading of testing of material which comes to us to be converted. In other words, we want to be sure that when the person who sends it to us says it is o. k. for this kind of work, that that is true. It is part of the routine testing. The other man's finished product now becomes our raw material, and we have to test the raw material that we use, so to speak.

Q. Do you buy this paper from the other people?

A. We buy the paper, go through the processes like converting them into the bottle, not paraffined, or the blank, I should say. It is not even formed up into that shape. Then we sell it to the dairy people.

Q. That is, you buy it from the paper people?

A. Yes.

Q. And when the paper people sell it to you, they
329 don't care what you do with it.

A. Well, they know what we are going to do with it, so they can make it to specifications, of course, but it becomes our property, you might say.

The Master: I understand.

Mr. Gariepy: Q. How often do you perform tests on the paper board that you purchase from the Cherry River Paper Company to convert into paper for milk containers?

A. Our tests on that are of two kinds, one being the physical qualities of it, for strength and what not, and the other the simpler bacteriological tests. We do two things. One is to test each lot of board received and also to test representative samples of the finished blanks as we send them out.

Q. How often are those tests made, was my question, Mr. Fisher?

A. Whenever a lot of board is received—

Q. No, Mr. Fisher. Is it daily, weekly, monthly, yearly? Let us get down to the fact. How often do you perform these tests on this board at your plant?

A. The board is received. It comes in at certain times. Whenever that is we test that board. In addition, we test each day upon the finished containers.

Mr. Gariepy: Mr. Reporter, will you mark these
330 photographs Plaintiff's Exhibits 33 to 38, both inclusive, for identification.

(The photographs of processes, equipment and products at the Gardner-Richardson plant referred to were thereupon marked by the reporter Plaintiff's Exhibits 33 to 38, both inclusive, for identification.)

Mr. Gariepy: Q. Mr. Witness, I show you what purports to be a photograph marked Plaintiff's Exhibit 33 for identification and ask you if you ever saw that before?

A. Yes.

Q. When and where?

A. It is a picture taken of a typical load of paper being fed into a printing press.

Q. When was that picture taken, and where?

A. Saturday morning last, at Middletown, Ohio.

Q. And what sort of paper board is that white sheet that appears there; what quality of paper board is that?

A. That is the Cherry River milkbottle paper.

Q. What kind of a machine is that board being held into?

A. It is an automatic feeder on a printing press.

Q. Is that the size in which the board is received or
331 purchased by your people from the Cherry River Paper Company?

A. Yes.

Q. And how many hands touch that board from the

time it is inserted into that machine until the time it gets to the fabrication processes?

A. There are no hands touch it going through the machine.

Mr. Gariepy: I offer that in evidence as Plaintiff's Exhibit 33.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photograph showing typical load of paper being fed into printing press so offered and received in evidence was marked PLAINTIFF'S EXHIBIT 33, and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. I show you Exhibit No. 34 for identification. Will you tell the Master what that picture shows, where it was taken, and when?

A. This is a picture taken last Saturday morning in the converting plant of Gardner-Richardson at Middletown, showing a pile of printed, cut, scored, creased milk bottle blanks as they are prepared and ready to be fed into a gluing machine, where the blank is folded to glue the

332 vertical seams.

Q. Is that the same type of board as is used in the Defendants' Exhibit No. 2 here, that carton, finished carton that we had?

A. Yes, sir.

Mr. Gariepy: I offer that in evidence as Plaintiff's Exhibit 34.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photograph showing pile of printed, cut, scored and creased milk bottle blanks, ready to be fed into gluing machine, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 34, and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. I show you Plaintiff's Exhibit No. 35 for identification. Will you tell me what that picture shows and when and where it was taken?

A. This is a picture of a flat, as we term it, or pile of the milk bottle board, as we receive it from the Cherry River Paper Company, where it is piled upon a wooden flat or skid, wrapped completely over the entire pile with clean water-proof paper, which in this picture has been torn aside to show the piled sheets.

333 Q. Who tore it aside?

A. Well, it was torn by one of the men when the picture was taken.

Q. At your request?

A. Yes, sir.

Q. To show the contents?

A. Yes, sir. It shows, further, how the load is banded down and strapped between wooden top and bottom to hold it in place. There are 3,000 sheets of paper in this pile.

Mr. Gariepy: I offer that in evidence as Plaintiff's Exhibit No. 35.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photograph of flat or pile of milk bottle board so offered and received in evidence was marked PLAINTIFF'S EXHIBIT NO. 35, and is aattached hereto and made a part hereof.)

Mr. Gariepy: Q. I show you Plaintiff's Exhibit No. 36 for identification. What does that picture show?

A. This picture shows the way in which a pile of blanks ready for the gluing machine is wrapped around with good, clean kraft paper to keep any dirt or anything getting onto it while it is waiting to be put through the gluing machine.

Mr. Schaefer: I don't hear you. What was that?

334 The Witness: While they are waiting to put it through the gluing machine. In particular, it is the same pile that was shown in the other exhibit.

Mr. Gariepy: Q. That is, Exhibit 34?

A. Yes, sir.

Q. Is that the usual, daily practice with regard to these piles of paper as they are received, waiting to be put through the gluing machine?

A. Yes.

Q. Is there any other object served other than to keep it from contamination, from touching?

A. That is the only object.

Q. In wrapping it up with paper while it is waiting?

A. Yes, sir.

Mr. Gariepy: I offer Exhibit No. 36 in evidence.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photograph showing pile of blanks ready for gluing machine so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT NO. 36 and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. Exhibit No. 37, what does that show, Mr. Witness?

335 A. This shows a pile of the printed sheets of paper. After they come from the printing press, they are wrapped with clean Kraft paper to protect them from any dirt or dust that might blow around and while they are waiting to be put through the cutting and scoring press.

Q. Is that the usual, daily routine and practice in the handling of that paper board?

A. Yes, sir.

Q. And was that torn open by you?

A. That was torn open to show the pile of paper therein.

Q. Just before the picture was taken?

A. Yes, sir.

Q. Was that taken last Saturday?

A. Yes, sir.

Mr. Gariepy: I offer Exhibit No. 37 in evidence.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photograph showing pile of printed sheets of paper board so offered and received in evidence was marked PLAINTIFF'S EXHIBIT NO. 37 and is attached hereto and made a part hereof.)

336 Mr. Gariepy: Q. Exhibit No. 38, will you tell the Master what that shows?

A. This picture is of a shipping container full of the flat completed milk bottle blanks as they are shipped to our customer, who uses them in a dairy. It shows, moreover, by illustration, how a small piece of kraft paper is wrapped around each fifty blanks or so in order that they may be pulled from the container with ease.

Q. Is that the customary practice in containers used in shipping fabricated milk containers to dealers?

A. Yes, sir. I might add that sometimes they use a little piece of paper board instead of the strip of paper.

The Master: Q. For what?

A. To help pull the pile apart and get the containers.

Mr. Gariepy: I offer Plaintiff's Exhibit No. 38 in evidence.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photograph showing container completed milk bottle blanks as shipped so offered and received in evidence,

was marked PLAINTIFF'S EXHIBIT NO. 38 and is attached hereto and made a part hereof.)

337 Mr. Gariepy: Q. Mr. Witness, will you describe what this paper is? Take one sheet, of which I show you a copy, which is printed on one side, and tell what process it goes through in the steps of manufacturing of the product itself.

A. This top sheet is the original board as received from the Cherry River Paper Company. The bottom sheet shows the sheet after it has been printed, cut and scored by press operation, but before the operation we term scrapping.

Q. Describe what you mean by scoring, Mr. Fisher.

A. The process of scoring is one in which the sheets of printed stock, which in this instance may have about fifteen or seventeen carton blanks, with printing on them, is fed into a press, which is equipped with scoring knives or rules, and they cut out the shape of the blank and aslo score such portions which later are bent when the bottle is formed into shape, and as the sheets, cut and scored, issue from this so-called scoring press they form into a pile, and later these tabs are knocked off, to let the final form of the blanks remain.

Q. Will you look at this, which purports to be a part of the section scored in the scoring operation, taken from

338 one of these big sheets, and tell where manual handling or manual service comes into play in connection with the handling of these, after the glue is put on.

The Master: Off the record a minute.

(Discussion off the record.)

Mr. Gariepy: Q. I show you, then, a finished blank, which purports to be a section taken from a large sheet after it is scored, is that right, Mr. Fisher?

A. Yes, sir.

Q. And will you tell the Master where the manual handling of this thing comes into play, with regard to fitting it for the gluing?

A. As these sheets of cut and scored material, such as this, issue from the cutting and scoring press, they fold themselves together, to the extent that a large pile of them folds up in the receiving bin of this press, and the men, who incidentally are dressed in white, examined medically and so on—

Q. How often are they examined medically?

A. The nurse examines them and checks up on them daily.

Q. What sort of an examination is that?

A. The daily examination is one to see whether
339 there are any troubles with the skin and so on, and that they are clean and things of that nature. Of course, when the men are hired they are given a complete examination from the beginning by the medical department.

Q. Is this a daily examination of employees who come in touch with this material?

A. A daily examination for general cleanliness, yes.

Q. How many nurses and doctors do you have on the ground there performing examinations and testing the employees daily?

A. We have a completely equipped hospital with one fulltime registered nurse, and then there is a company doctor who is called at any time.

Q. For the purpose of aiding in the examinations?

A. This is part of his work. Of course, they are there for other duties too.

Q. Is that customary, routine, daily in the plant?

A. Yes.

The Master: Q. What is this routine you are talking about? Now, you have got a great big sheet which has been cut into pieces. The pieces are not taken out of their relative position in that big sheet. They seem to have some attachment so that they remain in the same position
340 they were, that is, the pieces of paper containing the impressions are still in the sheet?

A. Yes.

Q. How do you get them out of the sheet?

A. These sheets pile up on a table at the end of the cutting press.

Q. What are you talking about? The big sheets?

A. The big sheets that are cut and scored, but still hung together.

Q. Yes.

A. These sheets here.

Q. Yes.

A. You will note the end of this sheet has a piece on it, which is later cut off.

Q. Yes.

A. The men grab as many sheets as will form a pile. At each end there is a number of men and they slip that over

onto the table and take some hammers and they knock all of those tabs apart, such as this. Those things knock out a large number at a time.

Q. Do you mean they can knock a whole set of them out?

A. Yes, sir, they will knock a pile, say, three or four inches high.

Q. What do they do? Knock them into a container of some kind?

A. They knock them onto the floor, and that is no
341 longer a part of the milk bottle process. It is rejected.

Q. They knock what on the floor?

A. They knock out the cut-outs.

Q. Do they knock this out or the other part?

A. They knock out all of the cut out portions around this and it leaves these in the pile.

Q. That is what I am talking about. They knock out the outer border?

A. Yes, sir.

Q. Which does not form a part of the portions which will later form the container?

A. Yes.

Q. And that leaves on the table, or whatever you have it on, merely these cut-outs?

A. A pile of these, or a number of these cut-outs corresponding to the position of these sheets on there or these blanks in the sheets.

The next operation is to grasp a pile of them and build them up to a convenient height, which might be a foot or a foot and a half, something like that, and by means of a wire brush all fragments which remain on the edges are knocked off.

Following that operation the piles are transferred to a flat of board, a skid, so to speak, which is covered with
342 a clean sheet of milk bottle board, which forms a pile about three or four feet high, as shown in one of these pictures you have.

Immediately thereafter a pile of these blanks is wrapped with the kraft paper or other paper, so that it remains out of the direct air, and it is fed into the gluing machine.

Q. When it gets to the gluing machine, what type of glue is used for the gluing of this blank?

A. The glue we used is called a Pure-Pak glue. It comes from the Arabol Company of Cicero, Illinois.

Q. And what are the chemical constituents of that glue that is used at the Gardner-Richardson plant on this paper?

A. It is a vegetable glue. I have not analyzed it. It is one that is specified we should use.

Q. Specified by whom?

A. Apparently by the milk bottle people somewhere along the line. I really don't know.

Mr. Gariepy: Q. Now, do you know about the ink that is used on these blanks as they are cut out of the big sheets?

A. Generally speaking, yes. They are inks which are developed especially for this paper.

343 Q. Do you know what the ink is made out of?

A. It is made out of the usual ingredients, varnish, linseed varnish, pure linseed, coloring material, extender, dryer and so on.

Q. Is there anything in that ink that is detrimental to health?

Mr. Schaefer: I object to that. The witness is not qualified to testify to that.

The Master: Q. Do you know anything about health matters?

A. No, sir.

Mr. Gariepy: Q. What about the penetration of this ink through? Have you performed any tests or done any research work in regard to the penetration of that ink after it is put on the blanks?

A. Ink on that kind of paper does not penetrate to any extent.

Mr. Schaefer: I move that be stricken as not responsive.

The Master: Read the question.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Master: Yes, the answer may be stricken.

Q. Have you performed any tests?

344 A. Specific tests, no, sir. May I explain?

Q. Yes.

A. From my general knowledge of this sort of thing, the ink cannot sink in to any extent. If you tear any of those printed surfaces you can see that the penetration of the ink stops a very short distance from the top. I might add that if there were any penetration of ink the cost would go up excessively, and that is always watched for.

Q. Do you know what the ink is composed of?

A. I have a copy of the formula of it, that has been supplied me.

Q. Is it possible that the dye part of the ink might not penetrate, while some other portion of the ink might go through further?

A. I think not.

Mr. Gariepy: Q. From whom do you buy the ink that you use on the Pure-Pak container that you put the name on?

A. The Hilton-Davis Chemical Company, Cincinnati, Ohio.

Q. In performing these tests or doing research work on the blanks after the printing, have you had any occasion to detect or find out whether the ink has penetrated through the five layers of paper?

345 A. The thing has always been so obvious that it would not, that I have not performed any particular test.

Q. What sort of a machine is this large paper board made in? Describe the type of machine, whether it is made out of steel or wrought iron or what it is, that the board as shown on Exhibit 33 goes into?

A. It is a large machine, made of all kinds of metal parts.

Q. Is it plated?

A. No, sir.

Q. It is not a plated machine?

A. I am not sure that I know what you mean by a plated machine.

Q. How long is that machine? Describe it to the Master.

The Master: What are you trying to show here?

Mr. Gariepy: I am trying to show that this is a gold plated machine that this goes into, which is the best type of machine for putting this paper board through in order to keep it free from bacteria and contamination.

The Master: Q. How about it, Mr. Witness?

A. The machine is about twenty feet long and ten feet or a little more high. It is like one of these intricate

346 presses.

Mr. Gariepy: Q. What about the plating?

A. No gold plate on it, no.

Q. Where does the gold plated machine come in touch with this product?

A. Really, I am not acquainted with any gold plated machine.

Q. Have you tested the paper board with regard to the transparency of the finished product, in the laboratory of the Gardner-Richardson Company?

A. Yes.

Q. And how often have you done that?

A. We do that daily, of the board, every time that we use the board.

Q. And in your tests of transparency, have you had occasion to gauge as to the quality of the stock used in it, whether virgin spruce pulp or otherwise at the time that you test it?

A. Yes.

Mr. Schaefer: What was that question?

(Mr. Gariepy's question was read by the reporter as above recorded.)

Mr. Schaefer: I object to that, as the witness has shown no qualification to make that determination, and there
347 has been no statement of what he did to determine it.

Mr. Gariepy? Let him tell what he did.

The Master: Q. Have you made any tests at all?

A. Yes, sir.

Q. Tell us what you did.

A. The standard test on that sort of thing is—

Mr. Gariepy: Q. Tell what you did?

A. Immerse the sheet—

The Master: Q. Did you do it?

A. Yes.

The Master: All right.

A. Immerse the sheets in molten paraffin, so they become transparent, and hold them up to the light and look through them.

Mr. Gariepy: Q. And what do you see when you look through them? How do you detect these things? What are the characteristics?

A. If a sheet of board is made out of clean, virgin stock, without any reissued stock containing any impurities, you won't see anything except a smooth, clear appearance, such as any transparent or semi-transparent film of paraffin would be.

Q. If it is not made out of clean, virgin spruce pulp,
348 how does it show up?

A. You see specks; you see clumps; anything that might not belong there shows up.

The Master: Q. Is this a part of your routine, to examine the sheets that you purchase?

A. Yes, sir.

Q. Have you ever noticed anywhere specks?

A. I have noticed an occasional speck.

Q. What have you done when you found a speck?

A. Well, I haven't done anything particularly. The proportion there would be so small that it would be indistinguishable.

Q. Have you ever seen sheets which appeared to you to contain something other than virgin stock?

A. No, sir.

Mr. Gariepy: Q. Since April 21, 1939, up to May 26, 1939, have you performed certain tests upon the virgin spruce pulp stock as secured from the Cherry River Paper Company and as it goes into the fabricated container here?

A. Yes.

Mr. Gariepy: Mr. Reporter, will you mark these sheets as Plaintiff's Exhibit 39 for identification?

349 (Several handwritten sheets containing laboratory reports referred to were thereupon marked Plaintiff's Exhibit No. 39 for identification.)

Mr. Gariepy: I show you a group of five sheets of paper, pinned together, marked Plaintiff's Exhibit No. 39 for identification, and ask you if you ever saw those sheets before?

A. Yes, sir.

Q. When and where?

A. These are laboratory reports on the colony counts of Cherry River paper bottle board and the finished bottles themselves, that is, finished in our converting plant.

Q. Did you make those counts and run those tests as tabulated on that Exhibit 39?

A. Yes, sir. They were done under my direction.

Q. And on the dates therein mentioned in the left hand margin?

A. Those dates on the left hand margin are the dates the sample was taken. The actual test may have been a day or so later.

Q. Is that in the ordinary run of your duties in connection with being chemist at the plant there, testing paper board?

A. Yes.

350 Q. And was that done in the ordinary course of your duties?

A. Yes, sir.

Q. Will you tell the Master what that shows with reference to your findings concerning the bacterial count in the paper board?

Mr. Schaefer: Let us have the method of test first.

Mr. Gariepy: All right.

Q. Describe your method of test in performing this work and doing this research?

A. The method of testing is to cut from the sample being considered, with sterile scissors and equipment, a ten gram sample of the board, which is disintegrated according to the standard technique, with a motor driven disintegrator, to form a pulp, with sterile water, and a portion of that pulp is pipe-headed into a Petri dish, into which is added a quantity of nutrient agar, which is used as a food for the bacteria to grow, if any are present, and the pulp well mixed with the agar in the dish and the prepared Petri dish incubated for forty-eight hours at 37 degrees Centigrade, at the end of which time the number of colonies of bacteria which may have developed, if any, are counted, and the results calculated back to colonies per gram of original paper.

351 Q. Were these findings shown in the right hand column made by you after performing these tests in the manner you have just described?

A. Yes, sir.

Q. On how much paper in the way of size? In grams.

A. Well, ten grams of stock were used to prepare the sample or to prepare the pulp.

Q. How many grams are there in the ordinary milk bottle made out of this same material, virgin spruce pulp?

A. I imagine there are thirty-four or thirty-five grams, which is merely an estimate.

Q. What was the bacteria count that you found in each one of those ten gram samples that you extracted?

Mr. Schaefer: Off the record just a moment.

(Discussion off the record.)

The Witness: A. The set of tests reported in Exhibit 39 show that the colony count varied from none up to as high as 156 colonies per gram, with the usual number around fifty or less.

Q. How many did you find that had as high as 156 colony counts per gram?

A. One.

Q. From April 21st to May 26, 1939?

352 A. Yes.

Q. And those are daily tests?

A. Yes.

Q. The average, you said, was fifty?

A. Well, that is not an average. It is usually less than fifty. I should add that that 156 figure was on a sample of board received in February, 1939, and test in April.

Q. And where was the sample board from February up until the time of the test, if you know?

A. It was in a cupboard in my office.

Q. And did the condition of the covering have anything to do with the colony count you found in it, where it was kept in your office?

A. I wouldn't know.

Q. Was it exposed in your office? Was it covered up or where was it?

A. It was covered up, wrapped up, also in the cupboard, behind closed doors.

Mr. Gariepy: I offer that in evidence as EXHIBIT NO. 39.

Mr. Schaefer: Q. Whose handwriting is this?

A. It is the handwriting of a Mr. Koehne, my assistant.

Q. These are also in the same handwriting?

353 A. This red X was just put there by me to identify the columns, certain results.

The Master: Q. Was that made under your supervision?

A. Yes, sir.

Mr. Gariepy: Q. Were these samples taken in the regular course of run at the mill or were there unusual circumstances in connection with the taking of these samples on which you performed these tests shown in Exhibit 39?

A. They were taken in the usual course of operation.

Q. Did they have anything to do with the matter of this litigation here?

A. No.

Q. Did you do it with this in mind or any foresight in connection with it?

A. No, sir.

Q. When did you know you were going to be asked concerning any such samples or testing, as shown in Exhibit 39?

A. Three o'clock the day before Memorial Day is the first I heard of it.

Q. That was after these tests were run?

A. Yes.

Mr. Schaefer: Q. I want to call your attention to the words "no count." They appear four times consecutively on page 1, opposite the dates 5/1, 5/3, 5/4, and 5/5, 354 and also to the same words when they appear on the fifth page of Plaintiff's Exhibit No. 39, opposite the dates 4/12, 4/13, 4/17, and 4/18.

A. The meaning of "no count" on that report means that they could not find any bacteria.

Q. I understand that. It appears to me from that exhibit on page 5 that the words "no count" and such counts as appear there, except opposite the dates 4/10 and 4/11, were written at a different time and by a person other than the person who wrote the balance of the paper.

A. There is only one man works on that thing in the laboratory and he is the one who kept this report. Prior to my knowledge of this affair I may have asked him to fill in certain information.

Q. What information did you ask him to fill in?

A. Sometimes the men in the laboratory have a habit of leaving a place blank instead of putting down the exact amount of what it is. That might mean "no count".

Q. Were these records made at the time the tests were run?

A. Yes, sir.

Q. Was this "no count" written at the time the rest of it was written?

A. I wouldn't know that.

Q. Was the "50" written opposite the date 4/14 at 355 the time the rest of it was written?

A. I have no means of knowing that, because I don't stand there watching them every minute the tests are being made.

The Master: Q. You notice there is a different handwriting, don't you?

A. Yes, I notice it.

Q. Do you notice whether that is a different handwriting? At least, there is a difference in the writing to an extent that one is darker than the other?

A. Yes.

Q. And that is what leads Mr. Schaefer to say that

probably it was done at a different time or by somebody else than the one who made the entries on the first sheets. Do you know whose handwriting the dark colored writing is, on sheet 4 there, in the right hand column?

Mr. Schaefer: The handwriting on sheet 5.

The Master: On sheet 5.

The Witness: A. The handwriting on those sheets, to the best of my knowledge, is that of Mr. Koehne. Now, he may have put down certain data and then come back a couple of days later and put those on.

The Master: Would you say the handwriting in the
356 last column is the same as the handwriting in the second from the last column, on page 5?

A. I would say so, yes, sir.

Q. The "no count" seems to be in larger characters than the writing in the last column, doesn't it?

A. Yes, it does.

Q. What?

A. It does, yes.

Mr. Gariepy: Speak up so we can hear you.

The Witness: It does.

The Master: Q. Would you say that is the same handwriting as the other?

A. To the best of my knowledge it is, yes, sir.

Mr. Gariepy: Q. Do you know anybody, Mr. Fisher, who worked on the preparation of this and writing this, other than this man Koehne?

A. There is none.

Mr. Gariepy: We will bring down Mr. Koehne, if it is necessary.

Mr. Schaefer: Q. You mean there is no one else or you don't know whether there is anybody else or not?

A. Mr. Koehne is the man assigned to that work. He is the one who knows about it.

Q. Do you know whether Mr. Koehne was the only man working on it?

A. I wasn't here every minute, no, sir. I might
357 add that this is a sheet taken from the work report as the experiments are being made. It never was typed up for any occasion such as this.

Mr. Gariepy: Q. That is the original entry?

A. That is the original entry, out of a loose-leaf book. These tests were started on one day and finished forty-eight hours or so later.

Mr. Schaefer: Q. Now, on page 2 of Plaintiff's Exhibit 39 you will see that in the last column on that page, beneath the red X, the words "no count" have been stricken out twice and underneath those words in one place the numeral 12 and in the other place the numeral 23 substituted.

A. I see that.

Q. Can you explain that?

A. The only explanation would be that he made the wrong entry on this laboratory work sheet and then changed it later.

Q. Are the entries made at the time the tests are made?

A. Yes.

Q. How would he have occasion to change it later?

A. Well, immediately after he made it. There is a large number of these tests going through at the same time and probably he found out he made a mistake, and changed it.

358 Mr. Schaefer: Q. Are the reports of the tests kept in any manner other than that, other than on these sheets?

A. Up until the present they have not.

Q. How would a man be able—assuming that on page 5, blanks were left, indicating no count—how would a man be able subsequently to go back and put in counts of 50 and 20, respectively?

A. I am sure I don't understand what you mean.

Q. I mean assuming that in the fourth column from the left, on page 5, these spaces were left not filled in, as you testified they might have been, a moment ago, from what source of information could a man subsequently go back and fill in with the counts of 50 and 20?

A. He might have a note in a pocketbook that they carry around with them.

Q. And they might not?

A. They might not.

Q. Assuming that they did not, there would be no source of information?

A. Well, a man is working in a small room by himself and he sees exactly what is going on; he has got the samples there; he can refer to samples after he has once finished this, he can put them in an ice box for a time and refer to the samples for a couple of days.

359 Q. The same thing I call your attention to with respect to page 6, certain of the writing on that page

appears to be a different character, a different shade or a lighter writing than the other writing, and it is true of page 6—the fourth, fifth columns from the left on that page; is that true?

A. Yes, sir.

Q. Did you make any of these counts yourself, any of the tests yourself?

A. I made hundreds of these particular ones myself; they were done under my direction, and many of them, myself, I have done.

Q. During this entire period of something more than a month you didn't do any of them?

A. I don't think I performed or did the actual counting of any of those samples there.

Q. Who is the man that performed the tests, Mr. Fisher?

A. Marcellus Koehne.

Mr. Gariepy: Q. What department is he in there?

A. He is one of my assistants.

Mr. Horan: Q. Do you keep a ledger result of these permanently in your office?

A. I have not.

360 Q. All tests you have are on paper similar to this exhibit 39?

A. Yes, sir, as to those tests.

Q. Do you have a record on paper similar to exhibit 39 of all tests you have run on this product?

A. That constitutes all the tests we have.

Q. This here exhibit, here, is all the tests that you have?

A. Yes.

Mr. Schaefer: Q. Those are all the tests that you ever run?

A. Yes.

Mr. Gariepy: Are you through asking him about that exhibit?

Mr. Schaefer: Yes.

Mr. Gariepy: Q. Mr. Fisher, the last question of Mr. Schaefer, and of Mr. Horan, was "Is that all of the tests you have ever run?" Is that during this particular time or previous to April 21, 1939?

A. My tests on the colony count only cover the ones I have given you here, on milk bottle board.

Q. The tests on the colony count only cover the ones you have given here on the milk bottle board?

A. Yes.

Q. Previous to April 21, 1939 did you run tests on milk bottle board?

361 A. Not on colony count.

Q. What did you run the test on?

A. Physical tests.

The Master: Q. Physical what?

A. Physical tests, for strength.

Mr. Gariepy: Q. That had nothing to do with bacteria count?

A. No, sir. Might I add, that we relied upon Dr. Sanborn's tests at that time, and that since then we decided to check up on it ourselves, too.

Q. This laboratory that you set up two months ago, at whose suggestion and request was this laboratory set up, and for what purposes?

A. It was set up at the suggestion of Dr. Sanborn that we do that type of work, to perform ourselves, on these situations.

Q. Previous to April 21st, and a laboratory such as was set up two months ago, run any tests such as these?

A. We didn't have any laboratory for that purpose.

Q. Koehne is down there and he is available in the event that we want to call on him, on this exhibit 39?

A. Yes, sir.

Q. And to testify concerning the entries here, the 362 matter of handwriting that counsel and the Master have asked you about?

A. Yes, sir.

Q. The light shade and the heavy shade?

A. Yes, sir.

Q. Is that taken from the working files of the work shop in the laboratory?

A. Yes, sir.

Q. Did you instruct Koehne how to perform these tests?

A. Yes, sir.

Q. Where did you secure your experience with regard to your data with regard to the proper method of performing these tests?

A. Early in January, the second week in January, from Dr. Sanborn.

Q. 1939?

A. 1939. Dr. Sanborn conducted a school in which this simple technique for colony count was taught us and the

purpose of doing it, and after that is when we set up the laboratory to do that particular testing job.

Q. Did you go down and attend the school and take this course?

A. Yes, sir.

Q. How long a course was it?

A. It lasted a week.

Q. How many other than yourself—sanitarians, you might call them, milk sanitarians or paper board sani-
363 tarians who took the course with you, if you know?

Mr. Schaefer: That is objected to.

The Master: Overruled. You may answer.

A. As I recall there were about fourteen men there and one woman.

Mr. Gariepy: Q. After taking the course, you set up this laboratory?

A. Yes, sir.

Q. Did you perform any tests with second grade stock, material that might happen to be run from time to time, has any such test been performed as to bacteria?

A. We have no occasion to run them. We have run them at times.

Q. How many employees are there in the plant in Middletown where this paper board is converted into the Pure-Pak container?

A. I would estimate 400, more or less.

Q. Are there any rules and regulations concerning the conduct of these employees, when they work on the paper board or touch it after it is made into the blank or the product with regard to sanitation?

Mr. Schaefer: That is objected to. Just a minute, there.

The Master: Objection overruled.

Mr. Gariepy: Q. Will you answer?

364 The Master: Yes or no.

A. Yes, sir.

Mr. Gariepy: Q. What are those rules and regulations that you know of, Mr. Witness?

Mr. Schaefer: That is objected to.

The Master: Are those regulations in writing?

The Witness: No, sir.

The Master: He may answer.

The Witness: The regulations are that—there is a small group of people who work in this kind of work.

Mr. Gariepy: Q. What kind of work?

A. Converting the milk bottle board into the containers.
Q. Yes.
A. Those people are inspected at intervals by the nurse to see that they are generally clean, that they are free from skin diseases particularly and also it is the intention of a foreman of any particular group to be sure that his men wash their hands if they leave the floor for any purpose and return. Those particular employees also are dressed in white and exceptional measures are taken to keep the presses and the surroundings clean.
Mr. Gariepy: Q. What are those measures that are taken? That is what we want to know.
A. They use certain presses almost all of the time
365 and this is considered a special operation, it is not just placed anywhere in the plant where it might be convenient to do it, but it is in the glueing department, the girls who work there are dressed completely in white and that final operation is carried on in a room that is completely by itself. The packing is carried out in that place, too.
Q. Completely by itself, do you mean it is enclosed in glass or what?
A. It is a room enclosed with brick walls, windows and so on.
Q. What about the sweeping and cleaning that goes on, with regard to cleaning the plant; what is that process in the plant?
A. It is the ordinary process, sprinkle water on the floor and cleaning it up.
Q. Is there any vacuum used?
A. I am not acquainted with whether there is or not.
Q. There might be, you don't know about it?
A. There might be. I don't know.
Q. But you don't know?
A. No.
Q. Who would know about it?
A. The superintendent.
The Master: Q. Why do you exercise such care with regard to cleanliness and so on?
366 A. Well, if I may explain this, in the manufacture or actual converting of board for ordinary purposes, they would be less careful in the way they handle it, less careful, perhaps, in the way the men are dressed and the way they handle their machines and all that, and we just give it special attention in this case.

Q. But why the special attention? Is this kind of material subject to contamination?

A. No, sir, no more than anything else.

Mr. Gariepy: Q. Is there anything else made in the plant that goes into the container and in these various departments where special attention is given that the Master refers to, now? Is there anything that you make in the plant that goes in to the making up, the fabricating of the fabricated container other than this?

A. The printing and scoring and other operations are made in that room but the storing and packing is in a separate room and the glueing is in a separate room.

Q. The glueing is in a separate room?

A. Yes, sir.

Q. What about the storing, you say, in the separated sheets?

A. That is in a large press room with other operations.

Q. After it leaves there, it goes into these similar 367 sections?

A. Yes, sir.

Q. Similar rooms?

A. Yes, sir.

The Master: Q. I am trying to find out, if you did not take these precautions what would happen to this paper board; would it be likely to be contaminated?

A. I don't think it would.

Q. Let's assume now that you have employees who are not inspected for skin diseases and that some of them do have skin diseases; would there be any likelihood of germs or bacteria attaching to the paper board blanks or to the paper board?

A. I don't believe I could answer that. I am not qualified.

Q. What is your training?

A. Chemist—chemical engineer.

Q. You are not a bacteriologist?

A. No, sir.

The Master: Go ahead.

Mr. Gariepy: Q. Mr. Fisher, do you have any experience concerning the moisture content of the paper board and its effect upon the bacteria count in the paper board?

A. No.

Mr. Schaefer: I object to that.

The Master: He answered "no."

Mr. Gariepy: He answered "no," so it don't make
368 any difference.

Q. Mr. Fisher, have you made any tests yourself similar to the tests outlined in Exhibit 39 that has been identified here, that Mr. Schaefer and the Master asked you about?

A. Yes.

Q. When were they made?

Mr. Schaefer: What was the question?

The Master: "Have you made any tests yourself similar to the tests outlined in Exhibit 39."

Q. When were those tests made, that is, your own tests?

A. They were made prior to these tests.

Q. By these tests, you mean those shown on Exhibit 39?

A. Yes, sir.

Q. On this virgin spruce pulp from the Cherry River Paper Company?

A. No. They were tests in general to acquaint me with the method of doing the job.

Q. That is previous to the time you set upon performing these tests in April?

A. Yes, sir.

Q. That is after you took the course in January of 1939?

A. The tests I took of this nature were all in Dr. Sanborn's School.

369 Q. Referring to the tests you ran at your plant after getting the board from the Cherry River Paper Company—do you follow me?

A. I follow you. I have made tests in connection with those, Mr. Koehne has made them and assisted with them.

The Master: Q. On Cherry River Paper board?

A. Yes, sir, largely to show the technique and without particular thought of what the result might be.

Mr. Gariepy: Q. What was the highest count that you found, colony count per gram or per 10-gram in that paper board when you ran these tests?

A. As I just said, I did not run the count on them, I was following the technique of running the counts.

Q. You did not make the count?

A. No, sir.

Q. Just the procedure only?

A. Yes, sir.

Q. The ultimate results of what you found did not concern you?

A. No.

Mr. Gariepy: I offer in evidence, counsel, Plaintiff's Exhibit 39 which has been testified to and which you have interrogated the witness about.

Mr. Shaefer: No objection.

The Master: It may be received.

370 (Said several sheets were offered and received in evidence, were marked "PLAINTIFF'S EXHIBIT NO. 39" and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. Is there any chance in the processes employed at the plant, in the regular procedure in the production of the paper board, for the second growth material that might be used in the manufacture of some other product, to be gotten into that section of the mill making the paper board here?

A. I would say no. Anybody could see that they are two different things.

Mr. Gariepy: You may cross examine, Mr. Schaefer.

The Master: We might take a recess for a couple of minutes.

Mr. Schaefer: We have reserved our right to cross examine the witness, if the Master please, and he will be produced back at a later date for cross examination.

Mr. Gariepy: Yes.

The Master: We will have a recess for a few minutes and you can put on your next witness.

(A five-minute recess taken.)

Mr. Schaefer: There are one or two questions I would like to ask Mr. Fisher without waiving my right to cross examine in the future.

371 The Master: Go ahead.

Mr. Schaefer: If that is agreeable to counsel.

Mr. Gariepy: Go ahead.

Cross-Examination by Mr. Schaefer.

Q. These are blanks that were shown to you on your direct examination, Mr. Schaefer?

A. Yes, sir.

Q. Would you look at this blank.

A. (Witness examines object.)

Mr. Schaefer: I will ask that this be marked Defendant's Exhibit 3 for identification.

(The piece of cardboard referred to was thereupon

marked by the Reporter "Defendants' Exhibit No. 3 for identification.")

Mr. Schaefer: Q. Will you examine Defendants' Exhibit 3 for identification and tell us what the red spot is appearing in the second panel from the right on that exhibit?

The Master: Red spot? Where? Right in the middle of it?

A. I don't know what it is.

Mr. Schaefer: Q. Is there any possibility of ink from the top of one of the printed blanks attaching itself to the bottom of the next printed blank?

372 A. There is such a possibility, yes. That is always guarded against.

Q. Successfully?

A. I think so, yes, sir.

The Master: Q. While you are talking about that, Mr. Schaefer, why not inquire about the dark line, the dirt or something that appears right on the fold on several of the folds of the blank?

A. I don't know the history of this particular sample but I do know this, that the normal inspection that these things go through as they are being fed into the glueing machine would mean the rejecting of this.

Mr. Gariepy: Q. Defendant's Exhibit 3 would be rejected?

A. Yes, sir.

Mr. Schaefer: Q. As they are going into what?

A. The glueing machine where they are folded and receive this glue.

Q. How are they put into the glueing machine?

A. A pile of these blanks is lifted by a girl and piled about two or three inches in thickness and she slaps them down against the edge of the table to fan them and separates them, one from another, and then she can see each one of these as it is being fed into the machine.

373 Q. Do you mean that she picks up each one and puts it into the machine?

A. She puts several hundred into the machine and the automatic feeder takes hold of them; she lifts them and fans it, as it is called.

Q. As you would shuffle a deck of cards?

A. Yes, sir. There is one girl called the inspector, or whatever you want to call her, at the end of the machine. Two of them work on the feeding end of the machine; one

prepares them to go in and the other one actually puts them in, and between the two of them they take one look at it like this.

Q. What does the one do who prepares them to go in?

A. She picks up a bunch and slips them—they are very deft—I can't do this, they hit them, and hit them so that each one shows up a little bit and they fan the things and look at them very quickly and they pass them on to the next person that shoves them into the machine and this inside surface is up here, that practically all they touch is on the top of the thing you see here which actually goes underneath the glue flap later.

The Master: This is submitted as a sample. I notice another spot on the second panel from the left. Then there is some sort of spot on the first panel and then there is a spot near the bottom of the third panel from
374 the left, as well as a dark line of dirt or whatever it is on the folds.

A. If I may answer this way, please—lying around in the room here they are going to get dirty but they are not handled that way in the plant. They go through this glueing machine 15,000 to 18,000 per hour. They are going through pretty fast.

Q. Would you say these marks left on the folds have been the result of the blank lying around here?

A. I should say so, here or some place else. Certainly this condition does not prevail in the plant.

Mr. Schaefer: Q. What does the other girl do?

A. There are two girls at the end of the machine.

Q. You have described the operation of one.

A. Yes, sir.

Q. What does the other one do?

A. One assists the other. One has the job of actually taking the pile that is ready for insertion in the glueing machine and putting it out where the automatic feeder feeds them through at the high rate and the other girl takes them off of the flap such as shown in one of those pictures and fans them and looks at the cartons to observe things like this which, incidentally, this is impossible—you couldn't like that in the plant.

375 The Master: Q. How do you know this is not something that occurs at the plant?

A. I don't know the history of it, of course, but just from a general knowledge of how these things are handled.

Q. You said ink might be impressed from the top of one to the bottom of the other blank?

A. Certainly. This is not ink on this score line.

Q. How do you know it isn't?

A. In the first place it is not the color of any of the ink on this carton.

Q. How do you know it is not grease?

A. That would take chemical analysis of course to determine that.

Q. You notice those black marks are right on the folds, apparently where the mark is made?

A. That is natural, the part that picks up the farthest from this sheet—like a blotter on the desk, no matter how clean the desk is, it is going to get dirty.

Mr. Schaefer: Q. How fast are these sheets fed into the glueing machine?

A. It varies from 15,000 to 18,000 an hour.

Q. An hour?

A. Yes, sir.

Q. One girl feeds these things?

A. Yes.

376 Q. She fans them at the rate of 15,000 to 18,000 an hour?

A. Yes, sir, she is working with big stacks of them, something like that.

Q. Why does she fan them?

A. It is partly in order to be sure that each one has got a little air in between it to make it easier to fit into this machine because those things are quite highly adhering, they are not stuck together, but they are highly adherent because they are handled in bundles and as soon as they break the stack, which is the common procedure in all converting work, there might be a tendency for two of those things to start through the glueing machine at once or to jam the machine.

Q. Does that ever happen?

A. Yes, sir.

Q. Frequently?

A. I wouldn't say frequently. You might get it. It does happen.

Q. It could happen?

A. That does happen, yes, sir.

Q. Is that frequent?

A. I wouldn't say that is frequent, no.

Q. Then what is the procedure when that happens?

A. Well, that means that somewhere along the length of this glueing machine there are some cartons which are all jammed up and have to be thrown away.

377 Q. How do they do that?

A. Reach in and pull them out, a matter of a few seconds.

Q. The only purpose of the fanning operation you have described is to separate these blanks, one from the other, is that right?

A. No, it is also to give another examination of the sheets.

Q. The girl examines them at the rate of—what was that figure—15,000 to 18,000 on hour?

A. Well, there is about 50 to 60 carton blanks in each inch thickness of that.

Mr. Gariepy: Q. Go ahead.

A. So you see a few inches of it makes a couple hundred cartons.

The Master: Q. Do any of these blanks pick up dirt quite readily? Do any of these blanks or not pick up dirt quite readily?

A. I wouldn't say that they do. The actual time that they are exposed to the air as individuals is very, very short.

Mr. Gariepy: Q. How short is it?

A. It is a matter of seconds at any particular time.

The Master: Q. Would ordinary handling cause finger prints to attach, to any extent?

A. Take an individual blank and handle it, yes, sir.

378 I might add, these girls of course have to work at high speed.

Q. Let's take this one right here. You will notice apparently some ink impressions near the end of two of the panels.

A. Yes, I notice that.

Q. What do you think causes that? That is on the inside of the blank. Also at the bottom of the third one and also on that one—all four panels, would you say that that is the impression of ink in those panels?

A. It might be, yes, sir.

Q. Is that an ordinary occurrence, or don't you know?

A. I really couldn't say. It is a thing guarded against by various means.

Q. Well, there is another one also, a stain as of ink on each of the four panels?

Mr. Schaefer: At the bottom, as well, Master.

The Master: What?

Mr. Schaefer: At the bottom of every one of them.

The Master: This is the bottom, isn't it?

Mr. Gariepy: That is the top.

The Master: The top?

Mr. Gariepy: The bottom as you are holding it. That is the scoring line, referring to the scoring line.

The Master: Q. This is near the top of the inside
379 of these blanks; there seems to be ink stains, isn't it?

A. There is a reddish stain there, yes, sir.

Q. The same thing in the next one?

A. That is dirt.

Q. With the addition of various smudges on each of the panels; do you know what those are?

A. I don't know.

Q. There is still a faint ink print or a little faint stain there at the top, it looks like ink stain; there is a loose fibre of some kind on one of these, do you think that might be one of the things you cut off of the end?

A. No.

Q. Do you think that those little pieces that you cut off sometimes get in the body of the container or on the blank lying on top of it?

A. That might happen on rare occasions, I say rare, because you are handling these things so fast.

Q. There is another one there that seems to be a sort of little ink stain near the top, isn't there?

A. Yes.

Q. Wherever there is a fold there seems to be a sort of line or something; there is another ink stain on the inside near the top, is that right, on the next one?

380 A. Yes, sir.

Q. The same thing on the next one?

A. Yes, sir.

Q. There is another one—it seems to be on almost every one, some sort of stain near the top.

Mr. Schaefer: I think you can go further and say every one, and also that line on the bottom.

Mr. Gariepy: You are referring to the scoring, counsel—and the Master, too; you refer to the place where it is scored and where a red line also appears. That is the scoring, the red mark only appears at the scoring and where the paper is under pressure and some part of it is higher than the rest of it.

The Master: Do you think that is ink in every case near the top? There seems to be one panel there or one sort of a box, square, near the top, it seems to have a little bit of reddish smudge or something on almost every one of these.

Mr. Schaefer: That is on the inside in each case.

The Witness: May I make a remark?

The Master: Yes, sure.

The Witness: The particular smudge appearing on this upper left hand corner.

Mr. Gariepy: The lip part.

The Witness: Near the lip, this is out of contact with the milk.

381 Mr. Gariepy: The witness is folding the carton.

The Master: Q. How is it out of contact with the milk?

The Witness: I mean these two.

The Master: How about the other three sides of the container?

Mr. Schaefer: Q. How about when you pour it?

Mr. Gariepy: The witness opens up the pouring lip and demonstrates it.

Mr. Schaefer: Q. This red line that has the appearance on the bottom.

A. That red line should not be there. It is an unfortunate set of samples. The girls would not pass that sort of thing.

Q. Where did these come from?

A. I picked them up from over there to show what a pile of cartons is, without any particular reference to the thing we are now speaking of. May I tell what remedy is used in a situation like this?

The Master: Yes.

A. In order to prevent or eliminate or reduce the offset which this may be in this set of samples which is not perfect, use is made of a spraying machine, which is thrown in between each sheet which prevents the sheets from

382 sticking to one another as they might do if that were not present. It is called an "offset spray" which comprises a solution of gum arabic which is a material partly used on adhesive employes to make them stick, dextrum and starchy material, water and alcohol and after each sheet is spread as it falls down onto this pile there is a whiff of that material goes in between the sheets and forms tiny specks of this material on the sheet and keeps the sheets separated one from another to a very slight

degree. On this particular set of samples something did not work right, let's put it that way. That would not have gotten by, that would have been caught on an inspection, anyway.

Q. Didn't this go through an inspection?

A. No, sir, this didn't go through an inspection. These are sheets, pile of sheets ready to go to the glue machine and on the glue machine, if I may say this, again—

Q. When does inspection occur, before or after the glueing machine?

A. At the beginning of the glueing machine as the girls feed it in and they will undoubtedly notice a thing like that and the foreman will reject it. I might even add that this is not a representative set of samples, that the scoring
383 has not been completed there either. These things wouldn't go through a machine anyhow because the scoring is incomplete.

The Master: Q. Do you say there is one operation when you trim the ends?

A. Yes, sir.

Q. Is that right?

A. Yes, sir, that is at the end of the cutting and scoring press.

Q. We have noticed in going through these blanks that certain little chips or slivers of paper are attached to the edges and in some instances the slivers are found on the inside surface of these blanks. You have noticed that?

A. Yes.

Q. Is there any operation which eliminates those slivers?

A. I would be unable to answer with respect to this particular set of samples because they were not selected with that in view.

384 Q. Take any set of samples, take any set of blanks, there is this cutting operation?

A. Yes.

Q. And then there may be or may not be some slivers or little fine fibres which is the result of the cutting and in some instances the slivers remain right at the edge, which has just been cut, and in other instances some of the slivers find their way down on to the side or the surface of the inside of the containers. Is it possible that some of those slivers might remain in the finished container?

A. There is a possibility of an occasional sliver getting through, yes, sir.

Mr. Gariepy: Are you through, counsel?

Mr. Schaefer: Yes.

Mr. Gariepy: Q. Is this sizing before that process that you mentioned, that coating?

A. This is before paraffining.

Q. And before this coating that you just mentioned a minute ago?

A. Yes, sir. There isn't a coat of anything; there are spicules of it.

The Master: Q. Moisture?

A. It isn't moisture, if you please. There is moisture present, it is in the form of a little half
385 sphere of something to keep the sheets from contacting, face to face.

Mr. Gariepy: Q. These haven't received that?

A. I think they haven't.

Q. Do you know, or don't you? If you don't know, don't guess at it.

A. I think they haven't.

Mr. Rall: Q. That is part of the printing process?

A. Yes, sir.

Q. Presumably, if those things are printed, and they appear to be, if the machine was operating, that took place, this operation that you have described for the purpose of keeping the thing separated; is that true?

A. I would assume that.

Mr. Schaefer: Q. What does the girl do when she finds a defective blank, feeding it into the glueing machine?

A. She doesn't feed it in.

Q. How does she stop it?

A. There are two girls, one of them who makes the inspection and airs or leaves the cartons, and after she has it properly prepared she passed it over to the other girl, who feeds them in.

386 Q. How does she pick them up? Will you take this bunch that the Master is holding and show us how the girl picks them up—this pile that is solid?

A. She feeds them into the machine. It has an inclined plate on the lid.

The Master: Q. How could she see each and every blank?

A. This girl who feeds it doesn't; it is the girl ahead of her who does this inspecting.

Mr. Horan: Q. Does she inspect every blank?

A. She will go like this (indicating). I am not very

adept at this thing. However, she holds it like that and looks at it.

Q. Can she see the entire board with that inspection?

A. She sees any glaring defects, yes.

Q. Assume that she goes like this (indicating), can she see the entire board like this?

The Master: Just fanning it.

A. Here is the reason that they can—all of these paper processes are used in handling large amounts of material, sheet after sheet, carton after carton, so that if there are any defects appearing in one, the likelihood is that there will be any number of them. If I may go back further on the paper machine, for example, there will be many that
387 go out in an hour, and the difference between the beginning of fifteen minutes and the ending of fifteen minutes is the same, and that same difference continues right through the entire handling process.

The Master: I have been holding that pile of blanks on my lap here and I notice now I am just full of slivers, little particles of fibres.

Mr. Schaefer: So is the witness.

The Master: They probably come from the edges which have been cut.

Q. Is there any likelihood of these fibres and slivers getting inside of the container at the time it is made up?

A. I wouldn't know. Judging from the appearance of this set of carton blanks, they haven't done a very good job of cleaning off the edges of it. That may be part of it. As I say, these were selected to more indicate what a pile of blanks is, than these other features.

Q. Those were picked up by yourself at random, weren't they?

A. Yes, sir.

Q. Well, is there any reason to believe that these are not fair samples of all of the blanks around there?

A. I would say this, if I may, that the indications here are that the rubbing of the wire brush was not car-
388 ried out very carefully.

Q. Is there any reason to believe that these are not fair samples of all of the blanks lying around?

A. I don't believe they are fair samples in that respect, but as to general configuration, shape and an indication of how a pile of them is handled, and so on.

Q. Is there any reason to say that the wire brushing

is done with any greater care on the others than it was done on these?

A. I wouldn't know.

Mr. Schaefer: Q. I want to call your attention to a sheet of uncut blanks to which you referred on your direct examination and I would like to ask you to look at the inside surface of this roll of blanks. Apparently, in that instance the outside of these blanks being printed in green ink, the complete impression or very nearly the complete impression—or what is it on the other side, that appears on the inside of the containers—is that correct?

A. Apparently so, from the sample. May I see the other side?

The Master: Q. That is either the impression that has gone through or else it has been impressed from the front of the next blank?

A. It hasn't gone through.

389 The Master: It is probably from the next blank, then.

Mr. Schaefer: That is as far as I am prepared to go with the witness at the present time.

Mr. Gariepy: Q. Mr. Fisher, Mr. Schaefer just tore the side of a blank here. Did you see anything coming through any of the layers of paper?

A. No, sir.

Q. The sample that he tore here is green?

A. Yes.

Q. Will you tear one of the red ones and show the Master whether anything comes through any of the fine layers of that paper? Tear it sideways, if you can, like he did?

A. (Witness tears same.)

Q. Is there anything shown there after you have taken off a couple of layers of that paper?

A. No, sir.

The Master: It doesn't shown any.

Mr. Gariepy: Q. With regard to these slivers that the Master and counsel asked you about, is that part of the same virgin spruce pulp that the container proper is made out of?

A. Yes, sir.

Q. And if there is no bacteria in the virgin spruce
390 pulp and the board, would there be any bacteria in the smaller slivers?

A. No, sir.

Q. What about the paraffining? What would it be in the event there was a small sliver inside of that container, in the box or the carton blank when it went then into the machine and was paraffined; what would happen to it?

A. It would come off in the paraffin.

The Master: It would do what?

A. Come off into the paraffin, the molten paraffin.

Q. How would it come off?

A. The paraffin is molten, it is liquid.

Q. What would it do, just make the sliver be imbedded in the hardened paraffin; it wouldn't destroy the sliver, would it?

A. It wouldn't destroy the sliver; it would probably go into a chunk of the paraffin, perhaps an occasional one would go into the paraffin and be covered and protected with the paraffin.

Mr. Gariepy: Q. The Master and counsel examined you concerning defendant's exhibit 3, the exhibit which I hand you; and I now hand you plaintiff's exhibit 40, do you see any grease lines or heavy black lines on the
391 scoring in the inside of this—referring to the straight lines, the cross marks, the horizontal and vertical—do you see any grease lines on there?

A. I don't.

Q. I show you the whole batch of about seventy-five or a hundred and ask you to look through them and say whether you find any green or black lines or grease lines that the Master and counsel referred to, on any of the scoring lines, horizontal or vertical, going through the inside of those containers—those blanks of containers? I counted those and there is about ninety or a hundred of those, Mr. Fisher.

A. I don't see any grease marks or black marks on the scoring lines.

Q. The Master is pointing to exhibit 40, to a little dark mark here just below the scoring at the top and one over on the left; what, in your opinion, is that that shows up there dark on the inside; can you tell without disintegrating that paper and analyzing it?

A. I can't tell just by looking at it.

Q. What, in your opinion, is that that shows up there?

A. It might be a crush mark.

Q. What is a crush mark?

A. A crush mark—well, if a paper being formed
392 up on a machine is a trifle heavier, speaking in thousandths of an inch and less, on one spot or another, the calendar operation is carried out, that spot is compressed more and forms a crush mark on the end of the paper machine.

Q. Is that common in the making up of paper board and fabricating of containers?

A. It is something that can happen easily and it also can be remedied.

Q. How is it remedied, if you know, Mr. Fisher?

A. It has to do with the changing conditions on the paper machine.

Q. The Master asked you, also counsel asked you, concerning the red marks shown at the top of this blank, on the inside. Where does the milk end, with regard to after the bottle is folded, with regard to the gabled roof? Where does printing appear to show through? Will you fold one of those up and show the Master and counsel?

A. I am going to dirty this one with my fingers now.

Mr. Schaefer: Suppose you take another one.

Mr. Gariepy: Take this one—another red one, the same thing.

A. What was the question? Will you please read it to me?

393 (Question read.)

A. The milk line would be below the bottom of the gabled roof.

Q. Is the inside of the gabled roof paraffined as are the entire four sides?

A. Yes, sir.

Q. So that this apparent red that they have asked you about would be covered by paraffin, sealed and waterproofed there?

A. Yes, sir.

Mr. Schaefer: I object to the "sealed and waterproofed."

Mr. Gariepy: Q. Would it be sealed, then?

Mr. Schaefer: I object to that. There is no showing here of competency on the part of this witness to testify to that.

The Master: Just say it is paraffined and we have the other testimony as to what the effect of the paraffining is.

Mr. Gariepy: Q. Look at exhibit 3 of the defendant's and plaintiff's exhibit 40 and feel of each of them and

tell me what these scorings show and indicate as to elevations or protrusions above the flat surface?

A. Might I remark that every time we feel it, we dirty it some more.

394 Q. Yes.

A. There are elevations, yes, sir.

Q. There are elevations?

A. Yes, sir.

Q. Those elevations, are they sufficient to cover up this grease or dirt shown on defendant's exhibit 3 around there?

A. Yes, sir.

Q. Here is a container that I have just rubbed across the top of the table. Will you tell me whether there is scoring where I put the weight on the table—is there any mark on it?

A. It shows black marks.

Mr. Gariepy: Do you want to ask him any more now?

Mr. Schaefer: Yes. I would like to have these marked as defendant's exhibits 4, 5 and 6.

The Master: They may be so marked.

(The three carton blanks referred to were thereupon marked by the Reporter "Defendants' exhibit 4, 5 and 6," respectively for identification.)

Mr. Rall: There isn't going to be any dispute on my part that in this printing operation which is a high speed proposition, and as the paper gets heavier on the

395 pile it tends to create an impression on the next sheet, called an "offset". There isn't going to be any dispute, at least from me, that in this printing operation there is in some of the containers an offset inside of the container.

The Master: What do you mean by an offset?

Mr. Rall: That is what the printers call an offset, an impression made on the back of a sheet by the weight of another as the pile gets higher.

Q. I am correct, Mr. Fisher, that these go into the pile?

A. Yes, sir.

Q. As the pile gets higher, of course, that gets heavier?

A. Yes. sir.

Mr. Rall: And in the ordinary operation, of course, they try to prevent the offset, because it looks smudgy, for one thing. As the pile gets heavier, the weight, of course, it is going to make an impression from the printed

surface of one to the back of the other, and that is only an offset.

The Master: Is that a wet impression, sometimes?

Mr. Rall: Pardon?

The Master: Is that a wet impression, sometimes, it is just an ink impression?

396 Mr. Rall: The pile gets pretty heavy and one will impress or offset on the other. I have made that statement because it looked to me as though these exhibits were being offered for that purpose, and there is no dispute about that.

The Witness: May I make a remark?

Mr. Schaefer: Wait a minute.

Mr. Gariepy: There is no objection to that statement. Fieldcrest Dairies, plaintiff, can adopt the same thing concerning the offset on the same container.

Mr. Schaefer: For illustrative purposes, I think we might have these in. These are the blanks which you testified concerning a moment ago, the outside of which, in case, is printed in green, showing you defendants' exhibits 4, 5 and 6 for identification.

A. Yes.

Q. The offset in each case appears in green on the inside of the paper blank?

A. There is a trace of offset, yes.

Q. Is there sometimes more offset than this?

A. No.

Q. Why do you say there is a trace of offset?

The Master: Traces may be very distinct and may not be so distinct.

397 Mr. Schaefer: I offer defendants' exhibits 4, 5 and 6 in evidence.

Mr. Rall: No objection.

The Master: They may be received.

(Said carton blanks so offered and received in evidence were marked "DEFENDANTS' EXHIBITS NOS. 4, 5 and 6", and are attached hereto and made a part hereof.)

Mr. Rall: Q. Those exhibits were taken out of the roll which has been die cut, but not separated?

A. They were taken from a pile of sheets.

Q. Referring to the exhibit counsel just handed you, printed in green, it is true that these exhibits were taken here this morning from a couple of sheets of container board that has been die cut and printed, but not separated?

A. Yes.

Q. And they were physically separated this morning?

Mr. Schaefer: That is correct.

A. Yes.

Mr. Rall: Q. Now, do you know where these sheets came from?

A. Yes, sir.

Q. Did you bring them?

398 A. I brought them.

Q. At what point in the manufacturing operation did you take them?

A. They were taken from the end of a cutting press.

Q. Is there any reason to believe that these are either more offset or less offset than the general, we might say, run of the press?

A. More offset.

Q. Than the general run of the press?

A. Yes, sir.

Q. Why is that?

A. I don't know why it occurred. I wouldn't know.

Q. The only thing I am trying to get at is, did you take these out normally, at a normal time in the operation, or did you take them when they were wet, so that the offset might be due to that?

Mr. Schaefer: I object to leading the witness.

The Master: Sustained. Don't lead the witness.

A. The particular samples were taken by one of my assistants who went out and brought me some sheets from the cutting press. The best of the sheets should merely show how this scrapping operation occurred, how the brushed cut-outs are eliminated by hitting them with a hammer.

399 Mr. Schaefer: Q. They were sheets picked at random, were they?

A. Yes.

Mr. Gariepy: Was there an objection to the exhibits?

The Master: They have already been received.

Mr. Schaefer: May I see plaintiff's exhibit 40?

Mr. Gariepy: Yes.

Mr. Schaefer: Q. Will you look at plaintiff's exhibit 40, at the next to the right hand panel of that, because that exhibit is slanted, to catch the light, you can see a shiny greasy spot appearing in the upper portion of that, next to the right hand panel?

A. Will you point to it exactly?

The Master: Now, I will put a ring around it with a pencil.

A. I see that, yes, sir.

Mr. Schaefer: Q. What sort of a spot is that?

A. Greasy spot, in my estimation.

The Master: Q. What is that?

A. Greasy spot, where the calendars have pounded down or condensed the sheet more in one spot than in another, due, perhaps, to being back on the paper machine further, the formation being a trifle thicker.

Mr. Schaefer: I would like to ask that this pile 400 of blanks be taken by the Master; only the top one of which I have handled and Mr. Horan has handled.

The Master: All right, I will take it.

Mr. Schaefer: So that there will be no misunderstanding about it, I will now offer in evidence defendants' exhibit 3, marked for identification.

Mr. Gariepy: No objection.

Mr. Rall: No objection.

The Master: It may be received.

(Said carton blank so offered and received in evidence was marked "DEFENDANTS' EXHIBIT NO. 3", and the same is attached hereto and made a part hereof.)

The Master: We will now take a recess until 2:00 o'clock, p. m.

(Thereupon, at 12:35 o'clock, p. m. on June 5, 1939, recess was taken until 2:00 o'clock, p. m. on the same day.)

401 (Caption)

Monday, June 5, 1939, 2:00 o'clock p. m.

Met, pursuant to recess.

Present:

Mr. Gariepy,
Mr. Rall,
Mr. Schaefer,
Mr. Horan.

402 HARRY C. FISHER, a witness called on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Schaefer (Continued).

Q. Mr. Fisher, I would like to ask you to look at each one of this pile of blanks. We will discard the first one. Look at each one of them. On the first one you look at you see across the scoring line at the bottom of the container a red mark.

A. Above it or below it?

Q. On the scoring line.

A. There is a trace of red there, but it is not a continuous red mark, unless the shadow makes it look that way.

Q. But there is red?

A. There is a trace of red in spots, yes.

Q. And on the next container, is there the same trace of red?

A. Yes, sir.

Q. And on this container, in the left hand panel, there appears to be a mark. Can you tell what that is?

A. I don't know what that is, really. It might be a pencil mark for all I can say.

Q. And on the next blank there is the same red mark at the scoring line.

403 A. There is a trace of red in spots along that line, but it is not a continuous red mark.

Q. And in the left hand panel there is another mark. Can you tell what that is?

A. No, sir.

Q. And on the next blank there are also red marks at the scoring line at the bottom of the blank?

A. Yes.

Q. And the next?

A. Yes.

Q. And the next?

A. Yes.

Q. Those red marks are also present on this next blank?

A. Yes.

Q. They are somewhat more pronounced on the next one?

A. Yes, they are.

The Master: That is all along that fold?

Mr. Schaefer: Yes, sir.

Q. And the same condition with respect to the next blank?

A. Yes, sir.

Q. And the next one?

A. Yes, sir.

Q. The next one?

A. Yes. These blanks are not complete, however, because the scoring has not been extended over to the edge and they would never get into production.

The Master: I noticed on that big pile you had here before, the fact was the same there, that the fold was not all the way over to the end?

404 Mr. Schaefer: Will you shape that container, Mr. Witness?

The Witness: As we would send it out, it would be this way (illustrating). The score has not extended from there to there. The same thing up here.

Mr. Schaefer: May I see Plaintiff's Exhibit No. 2?

The Master: All of these are that way, with respect to that scoring, every one of them. All those that you have here. As a matter of fact, it seems to me that you do not want to score all the way to the end, because that is where it overlaps and pastes together. Here you have made the point right along that it was not finished. You see, there is an overlap on the right hand panel that fits in just about the distance on the first panel, where that scoring ends, for about a half or three-quarters of an inch. It fits right on it. It makes a better point of contact without that scoring in there.

The Witness: I must be wrong on that point, then.

Mr. Schaefer: Q. You mean, that is the way it should be?

A. I never noticed that particular point in connection with it.

Q. Now, this next blank has also the same red
405 marks along the scoring line.

A. A few traces of it, yes, sir. This panel, I might remark, has not got any.

Q. Now, in the right hand panel of this blank to which you just referred there are two spots. Can you tell me what those are?

A. They seem to be scuff marks of some kind. I don't know what they are. They seem to be indented a little bit.

Q. This next one, do you see the same red marks along the scoring line here?

A. Yes, sir.

Q. And in the next the left hand panel of that container, when you hold it so that the light is reflected from it, do you see a shiny spot?

A. I see several shiny spots, many of them.

Q. Do you see a spot that looks like a grease spot, near the left hand edge of the left panel?

A. I think I see the spot you refer to. I wouldn't call that grease, though.

Q. What would you call it?

A. It might be a crush spot.

Q. What else?

A. Possibly it might be a slime spot.

406 Q. And is the same thing true of the spot on the panel next to the second from the right of that blank?

A. I can only answer by saying that it might be. There is no way to tell by looking at it.

Q. Whether it is a slime spot or not?

A. No.

Q. The spot is there, however?

A. There is some spot, yes.

The Master: Q. What do you mean by a crush spot?

A. A crush spot is a spot on the sheet that occurred while the sheet was being made on the paper machine. For example, if the sheet is a trifle thicker when it is formed on the wet end of the machine, in the paper, on the rest of the machine when it goes through the calendering operation there is more pressure exerted at that particular

spot, and it has that particular shape and appearance, and it also occurs at that point because there is a little more water pressure on it.

Mr. Schaefer: Q. And the spots you just identified are either crush spots or slime spots?

A. Yes.

Q. Now, the next container, the same marking along the bottom scoring line appears there, doesn't it?

407 A. Yes, sir.

Q. And on the—

A. Very slight, though.

Q. Perceptible?

A. I would say that, yes.

Q. And in the next to the right hand panel there is another spot such as you have just looked at and said was either a crush spot or a slime spot.

A. Yes.

Q. And the same red mark along the bottom scoring line of the next container blank appears?

A. Yes.

Q. And along the scoring line of the next blank?

A. Yes.

Q. And in the left hand panel of the next line are two of the frayed ends of fiber which you described previously.

A. One of them has disappeared.

The Master: Both fell off.

The Witness: Yes.

Mr. Schaefer: Q. There were two of them there?

A. Yes, sir.

Q. And also traces of red along the bottom scoring line?

A. Yes, sir.

Q. And the same traces of red along the bottom of

408 the scoring line of the next container?

A. Yes, sir.

Q. And the next one?

A. Yes.

Q. And the spot in the next to the right hand panel of this container blank is a slime spot or a crush spot?

A. Please point it out.

Q. Just look at the container and you will see it.

A. Yes.

Q. And the same or similar traces of red along the scoring line of the next container?

A. Faint, yes, sir.
Q. Fainter than the others?
A. Yes, sir.
Mr. Gariepy: Are you through?
Mr. Schaefer: I think so. Yes, that is all.

Redirect Examination by Mr. Rall.

Q. Mr. Fisher, these traces of red on the scoring line are barely perceptible, that is true, is it not?
A. Yes, sir.
Q. You held them up to the light, a strong light in the window, to be able to tell whether it was a red mark at all, didn't you?
A. Yes, sir.
Q. On the opposite side of these scored blanks, 409 that is, opposite the score mark at the bottom to which Mr. Schaefer has referred, there is a printed red line that is part of the printing, isn't there?
A. Yes, sir.
Q. In your opinion does the red mark on the scoring line represent an offset or does it represent penetration through the paper of the ink?
A. Why, that is an offset.
Mr. Schaefer: Just before you go on with that, how does the record stand?
(The record was read as above recorded.)
The Master: I have noticed at the bottom line, the scoring line, what appears to be a reddish tint to the scoring line, which in certain instances is more pronounced than in others. In some instances the line is quite red, that is, a darker red than it is in some of the other instances. I cannot make any generalities as to just how dark that scoring line is of the instances where it looks red at all, but it varies.
Mr. Rall. That is acceptable to me.
The Master: In some instances it is quite clear and in other instances you have to look a little closer to perceive that the scoring line has a reddish tint to it. Also with reference to the marks to which attention has been 410 called on some of these blanks, in some instances the mark is about the width and length of an eyelash and in the instances of what you may call smears, what you call slime spots and so on, the diameter of the spot is about a quarter of an inch or so. Those are about all of the marks to which attention was called, as I recall now.

Mr. Schaefer: Yes, I think so.

The Master: There may have been some other little marks.

Mr. Schaefer: Those frayed ends of the paper to which attention was called were no longer than half an inch.

Mr. Rall: Q. These crush spots to which you refer are made of the same material, excluding any slime spots, as the rest of the container board, isn't that true?

A. Yes.

Q. And due to the thickness that you described of the pulp at a particular point, the difference in pressure and the different amount of moisture which varying thicknesses of the pulp will have, accounts for the difference in color between the crush spots and the cardboard, is that correct?

A. Yes, sir.

411 Q. How well acquainted are you with printing processes generally, apart from your own plant?

A. Not particularly acquainted at all.

Q. Do you know the composition of the apparently oily coating on magazines like the Saturday Evening Post, which are printed in colors?

A. I never analyzed such, but I understand that such things are paraffinaceous sprays of some sort.

Q. What is the purpose of that coating on the Saturday Evening Post and these other high speed magazine operations?

A. To prevent offsetting.

Q. And that is the process of offset you described this morning?

A. The one I discussed this morning uses a different material than paraffin. Sometimes we use a paraffinaceous spray to prevent offsetting.

Q. Now, the offsetting that you have described on the container blank occurs before the conatiner is formed and dipped in paraffin, isn't that true?

A. Yes.

Mr. Gariepy: That is all, Mr. Fisher. You don't want to ask him any more, Mr. Schaefer?

Mr. Schaefer: Not at this time.

The Master: I would like to ask a question.

412 Q. If that red portion is ink, do you know whether that contains any microbes or bacteria?

A. I don't know, Master. I always understood from

what I have read that microbes and micro-biological life will not grow very well in an oily medium.

Q. Is the ink oily?

A. Speaking as contrasted with water, anything contrasted with water. The vehicle of the ink is loosely referred to as an oil.

Q. Then according to that, it would not make much difference whether the imprint of the ink on the outside of the container goes through the carton or not, as far as bacteria are concerned?

A. That is what my understanding would be, yes, sir.

Q. Although some of the ink might get mixed up with the milk, if the ink did go through the carton?

A. The offset, if any—this is an unusual condition, I should say—is of course protected further by the paraffin into which the container is dipped and coated.

Q. Let us assume now you have some ink on the inside of the container, either through the result of offsets or by going through the carton wall; so far as you know there would not be any bacteria that would get into the milk by reason of the presence of the ink in that way on the 413 inside of the carton?

A. There would not, no.

Q. In spite of the fact that the presence of ink on the inside might be objectionable for other reasons?

A. Yes, sir. I should say that the ink does not go through the paper.

Q. I say, one or the other?

A. Yes.

Q. You say there would not be any bacteria, so far as you know?

A. Yes.

Mr. Schaefer: I might say that the witness has not been qualified to answer those questions that the Master asked him, anyway.

The Master: Then we will sustain the objection to that.

Mr. Rall: There will be testimony on that subject.

Q. Can you demonstrate physically to the Master whether or not those faint and/or heavy red lines on the scoring line are really offsets? Take the ones that Mr. Schaefer showed you.

Mr. Gariepy: Take any one.

Mr. Rall: Q. Yes, take any one. Look through them, Mr. Fisher, and get one of the worst.

A. I will destroy this one now. Is that all right?

414 Q. That is all right.

A. (Witness tears blank apart.) From the printed place on the opposite, you can see there is no ink through there. The trace of ink is on this side.

The Master: Q. What?

A. The trace of ink, if any, is on that side.

Q. On the inside?

A. Yes.

Q. If you had drawn this off much thinner, I think we could have seen all of the red on the front.

A. I don't think so.

Mr. Rall: Q. Will you describe what you have just now done?

A. I took apart one of these printed milk bottle blanks—

Q. Was it one of the ones that Mr. Schaefer asked you as to whether the scoring mark showed some red?

A. Yes, sir.

Q. Then what did you do with it?

A. Tore out a piece of a panel and then tore it across the grain of the sheet, to show that the spot or the faint ink spot referred to as beng on the inside of the score did not exist under that score.

Q. If that red spot on the scoring line occurred because of ink passing through the container board from the

415 printed surface, what would be the condition of the fibers of the board after you tore it, as you just did?

A. It would be colored throughout.

Q. So that the test you have made demonstrates that this red line is an offset and not ink that has soaked through the container board, isn't that true?

A. Yes, sr.

Mr. Gariepy: Mr. Schaefer, when do you want Mr. Fisher back here for any further cross? You said you were not through with him.

Mr. Schaefer: Let me look at the transcript and then I can tell you better.

The Master: When you can, let your adversary know.

Mr. Schaefer: Yes.

Mr. Gariepy: And will you also let us know if you want Mr. Koehne here?

Mr. Schaefer: No, I made no objection to the admission of that exhibit.

Mr. Gariepy: Exhibit 39?

Mr. Schaefer: Yes.

Mr. Gariepy: It is considered as received in evidence?

The Master: It was received.

Mr. Rall: Let me ask one more question, please.

416 Mr. Fisher, these fine frayed particles or fibers that Mr. Schaefer referred to, describe as well as you can what they are. In picking up some of these container blanks Mr. Schaefer called attention to what he said were certain fibers, loose fibers. Will you describe those for the record?

A. Those loose fibers are in reality extremely tiny slivers of paper or paper board, which were formed when the sheet was cut out on the cutting press. They have the same composition as the entire board.

Q. If the container board from which those fibers came is sterile, then the fibers are sterile also, is that true?

A. Yes, sir.

Q. Did you describe the process by which the stamping or cutting of these container blanks takes place in your testimony this morning?

A. Not completely.

Q. What is it that causes these fibers that have been referred to?

A. In the cutting and scoring press there are knives set in a bed, which make contact with the sheet, against another plate on the press, so that the knives cut through as the sheet passes through the press. When it emerges from the other end of the machine, these tiny frays here are

417 largely knocked off by the operations the scrappers go through with the brush. In this instance there may be a few of those frays that have stayed on the carton.

Q. Under normal conditions what additional handling would there be to this pile of container blanks that you have been referring to?

A. After they have come from the cutting and scoring press and knocked out of the sheet, they are piled upon a flat, covered with clean paper, and then wrapped, as I showed in one of the pictures, and then are transferred to the glue machine, where they are fed, large bundles of them or piles of them are fed into the gluing machine, through the automatic application of the glue and the folding of the carton into flat shape.

Q. Has this pile of cartons been through the gluing machine?

A. No, sir.

Q. Just where in the process of manufacture did you remove these cartons or these flat blanks?

A. These were taken from a flat near the end of the gluing machine, where they were standing ready to be put through that machine.

Q. That handling operation, state whether the glu-
418 ing operations would to any extent remove these fibers, loose fibers that we have been referring to?

Mr. Schaefer: I must object to leading the witness, again.

The Master: Reframe your question.

Mr. Rall: Q. After the gluing operation—well, I submit I have got a right to ask him what, if anything, that handling operation does to the fiber.

The Master: Go ahead and ask it. If there has been any suggestion, it is there already.

Mr. Schaefer: Yes.

Mr. Rall: Q. Mr. Fisher, does this gluing operation tend to remove the loose fibers that were found in some instance in this pile of flat cartons?

A. Yes, sir.

Q. How?

A. They are being whipped through the machine at a very high rate of speed and it creates a little draft as they pass along this line of the machine.

Q. And would the fibers respond readily to that draft?

A. I should think they would.

The Master: Q. Would a draft have a tendency to blow fibers onto the paper as well as off?

A. I don't think so, Master, because as the blanks start into the machine they are folded up; they are going
419 very fast up to the point where they are folded, and after they are folded there is nothing ahead of them in the draft that would blow back on them, so to speak.

Q. There might be some fibers in the machine that had been blown off of the paper, isn't that true?

A. Well, that is true, yes.

Q. And the same draft that blows some fibers off might blow some other fibers on?

A. That would be a little difficult, because the carton—if I may explain it this way. The carton starts in the machine and a draft would tend to blow the fibers off. Immediately the carton is folded up that way, it would be rather remote for a fiber to find its way in between the folded carton.

Q. I am not talking about that. I am talking about fibers that have been blown off of one carton that might be around the machine somewhere, so that the next draft would blow them onto the open carton that follows, and then the draft would not blow out all of the fibers from the following carton.

A. I am sorry, I cannot answer that.

The Master: Go ahead.

Mr. Gariepy: That is all, Mr. Fisher.

(Witness excused.)

420 Mr. Gariepy: Master, on direct examination of Dr. Sanborn on Monday, he testified concerning the Reading, as he called it, Pennsylvania, ordinance, with special reference to the delivery of milk to quarantined residences. I stated at that time, when the doctor was testifying and produced his copy of the ordinance, that I would secure a certified copy of the Reading ordinance, which I have here today, certified to by the clerk as of June 1, 1939. I offer it in evidence, with special reference to Sections 24 and 26, dealing with the subject matter of containers in the delivery of milk in containers to places under quarantine, referred to at the time that Dr. Sanborn was here.

I have shown a copy of this ordinance and certificate to counsel for the city.

The Master: Was the orignal document received in evidence?

Mr. Gariepy: The original document was received in evidence and I think Dr. Sanborn—

Mr. Horan: No. Portions of it were referred to, but it was not admitted in evidence.

The Master: All you ask now is to substitute this for the other?

Mr. Gariepy: Yes.

421 Mr. Schaefer: No. The ordinance has not been marked, as far as I know. I don't know. Maybe it has.

Mr. Rall: It has not been marked.

Mr. Schaefer: What was done with this: When the matter came up I agreed to stipulate that the Reading, Pennsylvania, ordinance required that milk to be delivered to quarantined homes had to be delivered in single service containers. I stipulated to it at that time.

The Master: Do you require anything more than that, Mr. Gariepy?

Mr. Gariepy: I think the meat of it ought to be in, and

I suggest that the court reporter copy those two sections that control the use, Sections 24 and 26.

The Master: Do you have any objection to that, Mr. Schaefer?

Mr. Schaefer: No.

The Master: That may be done.

Mr. Schaefer: This, of course, is subject to our objection as to materiality.

Mr. Rall: It is agreed that the offer of portions of the ordinance is accepted, subject to objection for materiality and relevancy.

422 (The excerpts from the certified copy of the ordinance referred to, of the City of Reading, Pennsylvania, passed December 1, 1937, are as follows:

"Section 24. Containers.

"(a) All pasteurized milk and milk products shall be placed in their final delivery containers in the milk plant in which they are pasteurized. All raw and certified milk and milk products sold for consumption in the raw state shall be placed in their final delivery containers at the dairy farm at which they are produced. Such container shall be a glass bottle, can or other receptacle approved by the Chief Food Inspector, sterilized as provided in this ordinance. Sterile bottles, or other receptacles made of paper, paraffin or other similar material, may be used as the final container, when permitted by the Chief Food Inspector, if manufacture and sterilization is accomplished as provided in this ordinance, in a way satisfactory to, and allowing adequate method of check or control by the Chief Food Inspector. Such final containers shall be leak-proof, and

423 tightly capped, closed or stoppered.

"(b) Milk for delivery to any house or location where a contagious disease exists shall be placed only in non-refillable containers, of a type and design approved by the Chief Food Inspector. Such containers shall not be again collected by the distributor, but shall be disposed of in a way satisfactory to the Chief Food Inspector. The Chief Food Inspector is hereby empowered to take any other steps necessary to prevent the spread of contagion from such sources through contaminated milk, milk products or milk equipment."

"Section 26. Report of Contagious Diseases Required. Every person engaged in the production, handling or sale of milk, or milk products, or handling equipment used in

connection therewith, shall immediately notify the Chief Food Inspector, who in turn shall immediately notify the Health Officer, of any case or suspected case of disease reportable to local Boards of Health under the regulations of the Pennsylvania State Department of Health, either in himself, his family, his employees, or their immediate
424 family or associates, or within the establishment or premises where milk or milk products are produced, handled, possessed or sold, and at the same time shall suspend the handling, sale and distribution of the milk or milk products until authorized to resume by the Chief Food Inspector. Any person diseased, or suspected of contagious disease, or contact with a contagious disease, or otherwise likely to transmit a contagious disease, shall have no part in the production, handling, or sale of milk, milk products, or milk utensils, and shall not enter into or near the premises where such operations are conducted, until authorized in writing. The person responsible for compliance with the provisions of this section is the permittee whose milk is, or is in danger of, being affected.'')

Mr. Garepy: Mr. Kasper.

CHARLES J. KASPER, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

425 *Direct Examination by Mr. Gariepy.*

Q. State your name, please.
A. Charles J. Kasper.
Q. Your address?
A. 2337 South 53rd Avenue, Cicero.
Q. Business and occupation?
A. Production manager.
Q. For whom?
A. Arabol Manufacturing Company, situated at 1835 South 54th Avenue, Cicero.
Q. What does the Arabol Manufacturing Company make?
A. Adhesives.
Q. Do they make the adhesives that are used by the plaintiff, Fieldcrest Dairies and by the Gardner-Richardson people here, in the fabricating of this container?
A. We supply Gardner-Richardson. I wouldn't know definitely whether it is used in that container.

Q. Do you supply it to Gardner-Richardson?
A. We do, yes.
Q. Do you know what the materials that are used in the making up of that adhesive that is supplied to the Gardner-Richardson people are?
A. I do.
Q. Do you know the formula for the making of that
426 adhesive?
A. I do.
Q. Will you tell the Master what materials are used in the making up of that adhesive?
A. We use water.
Q. What kind of water?
A. Regular tap water.
Q. Keep your voice up.
A. Water which is supplied by the city. We use sago, which we get from southern countries, Africa. It is a sort of a powder that comes from a tree. We use caustic.
Q. What kind of caustic?
A. Say, sodium hydroxide.
Q. What else?
A. Nitric.
Q. What else?
A. Nitric.
Q. What other substance do you use?
A. Sodium peroxide.
Q. How much of each is used in making up one batch, we will say, of this adhesive? How much water, how much sago flour?
A. I would say water 38 per cent.
Q. How much sago flour?
A. Just a minute. Let me take that back. I have it marked here. We have over nine thousand formulas and I don't remember them all. I will take that back. Water is 29 per cent and sago is 38 per cent.
427 Q. How much sodium peroxide?
A. Sodium peroxide is about 3/10 of one per cent.
Q. And what function does it perform in making up the finished product?
A. It acts as a bleach and I would also say it would be partly a preservative.
Q. Now, the nitrate, how much per cent is that?
A. The nitrate is used to neutralize the caustic, and the percentage of that is about ten per cent.

The Master: Q. Is any gum arabic used in this?

A. No.

Mr. Gariepy: Q. What about this caustic?

A. Caustic. Let me see. It would be 19 per cent of caustic. It takes 10 per cent of acid to neutralize 19 per cent of caustic.

Q. What is the function of this cuastic?

A. The caustic is to hydrolyze this sago, a sort of conversion action.

Q. What is the function of the nitrate? Can you tell the Master that?

A. It is to neutralize the alkali.

Q. When you pack up or make a batch of this material, do you put it in certain containers for shipment?

A. Yes, we put it in wooden containers.

Q. Made out of what?

A. Pine wood.

428 Q. And what do you put inside the container before shipping, when putting in a batch of material or adhesive that you make?

A. These containers, before they are filled, are waxed.

Q. With what?

A. Paraffin.

Q. Do you happen to know the temperature at which the paraffin is applied to the inside of the container, before it is filled?

A. I would say about 190 Fahrenheit.

Q. Is it shipped in that same container after the waxing and after the material is poured in, to the customer?

A. It is shipped in that, but it is non-refillable. It is a non-returnable container.

Q. It is a non-returnable container?

A. Yes.

Q. Every time you make a shipment of a certain batch of the adhesive, it is in a separate and new container when put up?

A. That is right.

Q. How long have you been supplying this adhesive to the Gardner-Richardson people?

A. I am sorry that I cannot answer that. I am not on the sales end of it. I am just on the production. I 429 cannot answer that.

Q. Have you sent samples of this to Dr. Sanborn at Geneva, for examination?

A. I believe we have.

Q. Mr. Kasper, can you tell us what this adhesive is used for in the trade, in the manufacture of paper containers?

A. Well, it is used a good deal in making up ice cream containers, butter containers, and a good many other things.

Q. What others than ice cream and butter that you know of are used in everyday experience?

A. Well, I would mention butter and ice cream and cheese, because it is a special formula that is recommended for such purpose. It is not used for an all-around glue, because it is too expensive a glue to use for shipping cases and so on.

The Master: Speak up.

The Witness: I say this glue is especially developed for that particular job.

Mr. Gariepy: Q. What about the adhesive that is used on soda straws that you use to sip drinks through at a soda fountain counter?

A. I would say the adhesive for that purpose, the
430 ingredients would be the same or, say, the adhesive is of the same characteristics.

Q. What about the adhesive used on paper drinking cups that you get at a counter, that you drink milk from, or hot coffee?

A. I would say that is the same.

Q. Are you acquainted with the adhesive used on cereal containers, such as Cream of Wheat and Shredded Wheat?

A. Yes.

Q. Is it used on those articles?

A. Most of those cartons will have an inner wrapper. It is used to seal the carton. Of course, they are of the same base, principally. Maybe corn is used as a base rather than sago or tapioca.

Q. Do you consider tapioca starch advisable, or what do you think of that?

A. Well, tapioca is not a starch. Corn starch is not considered as highly as tapioca.

Mr. Schaefer: Q. Not considered as what?

A. Corn. I say corn is not considered superior to tapioca. I would say tapioca is the better material to use.

Mr. Gariepy: Q. Why is sago flour used? Will you tell us that?

431 A. I would say it is in about the same class as

tapioca. It is a better grade and stronger and when used in an adhesive is superior to corn.

Mr. Gariepy: Cross-examine.

Mr. Schaefer: I will reserve cross-examination.

The Master: That is all. Cross-examination is reserved.

(Witness excused.)

Mr. Gariepy: Mr. Stern.

MORTIMER E. STERN, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name?

A. Mortimer E. Stern.

Q. Where do you live?

A. 1157 East 52nd street, Chicago.

Q. Business and occupation?

A. Factory manager for the National Adhesive Corporation.

Q. Located where?

A. 3641 South Washtenaw avenue, Chicago.

Q. How long have you been factory manager?

A. About ten years.

432 Q. Are you a graduate of any schools or colleges?

A. Yes. I am a graduate of Case School of Applied Science.

Q. That is at Cleveland?

A. Cleveland, Ohio.

Q. With what degrees were you graduated?

A. Bachelor of Science and Master of Science.

Q. How long did you follow that vocation and that training you received in school?

A. Well, I graduated in 1918. That makes twenty-one years.

Q. You are at the present time factory manager of the National Adhesive Corporation?

A. Yes, sir.

Q. Are you acquainted with the adhesive that is used by the Gardner-Richardson people in the Pure-Pak container?

A. Only superficially. It is manufactured by a competitive concern and I just know of it from hearsay.

Q. Do you know what it is made out of?

A. I just heard Mr. Kasper say.

Q. Do you know of the other adhesive that goes into the makeup of the Pure-Pak container, in the sealing of the bottom of it?

A. Yes, sir. We manufacture that.

Q. What do you call that adhesive?

433 A. You mean, what is it manufactured from?

Q. Yes.

A. It is manufactured from tapioca starch.

Q. And what are the other ingredients, other than tapioca starch?

The Master: Do I understand that this adhesive that he is talking about is used for a different purpose than that which Mr. Kasper was talking about?

Mr. Gariepy: That is right. His is used for the sealing of the bottom of the container.

The Master: Where is Mr. Kasper's adhesive used?

Mr. Gariepy: Mr. Stern's adhesive is used in the bottom here, in the machine itself. Mr. Kasper's is the light blue part which is used on the inside here when it leaves the Gardner-Richardson people, made by the Arabol Company.

The Master: What do they do with the Arabol? What do they paste with it?

Mr. Gariepy: He showed you in the fabrication this morning.

The Master: On the side, you mean?

The Witness: This seam right here.

Mr. Gariepy: That is right.

The Master: The up and down seam, while Mr. Stern's adhesive is used at the bottom?

434 Mr. Gariepy: On the bottom, and here (indicating).

The Master: I see. Is the adhesive that Mr. Stern has a lighter or heavier adhesive?

Mr. Gariepy: Let him tell that.

The Master: Q. Is it?

A. I cannot compare our adhesive with our competitor's, because I don't know what it is, except from hearsay. I can just tell you about my own.

The Master: Go ahead.

Mr. Gariepy: Q. What is your adhesive that is used in the bottom of this container, Plaintiff's Exhibit No. 2? What is that made up of?

A. It is made from tapioca starch.

Q. What else besides the starch?

A. Sodium nitrate.

Q. What percentage of sodium nitrate and what percentage of starch?

A. There is 29.6 per cent pure food tapioca starch and 5.3 per cent sodium nitrate.

Q. What about sodium benzoate?

A. There are some more.

Q. Yes.

A. There is 2.8 per cent salt, sodium chloride, and 1¼ per cent sodium benzoate.

Q. How much water is used?

A. Water, 55.4 per cent.

435 Q. And is that ordinary water or is it chlorinated water or what kind of water is it?

A. Lake water, tap water.

Q. What effect does this preservative have when applied to the paper container?

A. The preservative renders the adhesive permanently sterile, prevents it from decomposing or spoiling.

Q. Is there any peroxide used to sterilize the water?

A. Yes. The ingredients I gave you were the final ingredients in the adhesive, after manufacture. During the manufacture there are other chemicals used, but they react among themselves and form only the ingredients which I previously listed. For instance, we use caustic soda and nitric acid, the same as the Arabol Manufacturing Company uses, but the reaction, the chemical reaction between the caustic soda and the nitric acid forms the sodium nitrate, which I just listed, that I gave the percentage of. There is also hydrogen peroxide used, one-half of one per cent hydrogen peroxide.

Q. What effect does that have upon the product?

A. The hydrogen peroxide renders the water sterile and has an oxidizing effect upon the starch.

Q. Does excessive heat or excessive cold affect your product, as applied to the bottom of the container?

436 A. Excessive heat, of course, will burn it.

Q. And what about cold? Put it in the ice box, containing a quart of milk.

A. It would have no effect upon it.

Q. Are you acquainted with the adhesives used in soda straws at a soda fountain?

A. Yes.

Q. And are you acquainted with the adhesives used on paper drinking cups?

A. Yes.
Q. Ice cream cartons?
A. Yes.
Q. On food cartons for cheese and butter?
A. Yes.
Q. What type of adhesive is used, what quality of adhesive is used and supplied on those products?
A. The same general type as is used in fabricating the seam and bottom of this milk container. That is a vegetable adhesive, manufactured from either corn starch, sago starch or tapioca starch.
Q. Is this a special adhesive that is used in the bottom of this milk container?
A. We developed this adhesive especially for use on this carton.
Q. Have you had samples of your adhesive analyzed, Mr. Stern?
A. No, we have not. We sent a sample to the University of Illinois, at the request of Ex-Cell-O Cor-
437 poration.
Q. When was that, Mr. Stern?
A. I believe it was about a year ago.
Q. Have you received back a copy of the analysis that they gave you?
A. We did not receive the copy of the analysis, although we were informed by the Ex-Cell-O Corporation that the—
Q. No, you cannot tell what they got.
A. No?
Q. You did not get it back?
A. We did not get it back.
Q. At what temperature is water used in making up this formula for the adhesive product? Is it heated at a high temperature, or what is it?
A. One hundred and twenty-five degrees Fahrenheit.
Q. And where is this tapioca flour used, or where does it come from, that you use?
A. It is imported from the far east and it comes from a root, similar to a potato.
The Master: Q. What is that? The tapioca?
A. The tapioca, yes. It is the same starch as used in tapioca pudding.
Mr. Gariepy: Cross-examine.
Mr. Schaefer: I will reserve my cross-examination.
438 Mr. Gariepy: You don't want to cross-examine Mr. Stern?

Mr. Schaefer: Not now.

Mr. Rall: Mr. Stern, one more question.

Q. To whom, specifically, at the University of Illinois, did you send the sample?

A. I don't recall. It was the Bureau of—

Q. Was it the Chicago department here?

A. No, it was down at Champaign.

Q. You sent it down to Champaign?

A. Yes.

Q. You don't know whether it was Dr. Prucha?

A. That sounds familiar, Dr. Prucha.

Q. P-r-u-c-h-a.

A. P-r-u-c-h-a, I believe that was the name.

Q. And how did you get that sample?

A. We removed it from a container of the adhesive.

Q. At random?

A. We opened up one of our—it was taken from storage and we removed the sample from it.

Q. What I am trying to get at is this: After you got the order did you then make up the sample?

A. No. We only make this up once every two or three months, and when we received the request for the sample we merely opened up a container of adhesive.

439 The Master: Q. You did not take any particular container?

A. No.

Q. Just took it at random?

A. Just took it at random and opened that container and filled the bottle.

Mr. Gariepy: One more question.

Q. This adhesive, after it is made up and is to be shipped away, how do you protect it ?

A. It is shipped in a waxed wooden container.

Q. Made out of what?

A. New gumwood barrels.

Q. And are they paraffined?

A. They are paraffined.

Q. At what temperature do you paraffin yours?

A. We don't paraffin them. We purchase them from one of the large barrel manufacturers in Chicago.

Q. And are they re-used by you people?

A. Never.

Q. Never re-used?

A. No.

Q. Why do you use the paraffined gumwood container?

A. Well, they are a very satisfactory container and they are clean and practically the color of that wood, of this paper.

Q. Referring to the paper board here?

A. They are a very fine looking container, smooth
440 on the inside, and then they are waxed, to seal the pores of the wood. It is the same type of barrel as condensed milk is shipped in from the milk dairies.

Q. What is your opinion as to whether the peroxide and the preservatives that are used in the form of antiseptics will keep this adhesive sterile or not?

A. We know from experience that we manufacture the adhesive and we have had lots of it around for months, and it does not spoil or deteriorate.

Q. Is there anything in this adhesive that you could consider a culture for bacteria?

Mr. Schaefer: That is objected to.

Mr. Gariepy: He is a chemist.

The Master: I don't think he is.

Q. You are not a chemist, are you?

A. I certainly am.

Mr. Gariepy: A graduate of the Case School of Applied Science.

Mr. Schaefer: That still does not qualify the witness to testify to that.

The Master: Do you feel yourself qualified to answer that question, Mr. Witness?

The Witness: Yes.

The Master: I will let him answer.

The Witness: What was that question again?

441 (Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. There is nothing that would support bacteria life in the adhesive.

Mr. Gariepy: Q. Do you know whether there is such a substance in ice cream known as gelatin?

A. To my understanding the gelatin is used in the manufacture of ice cream to make the dipper of ice cream firm when it is dipped out of five-gallon containers or whatever they get it out of.

Q. And is that gelatin a culture?

A. Gelatin is used by biologists to grow bacteria.

The Master: Pardon me. Will you please let me interrupt there?

Q. Talking about that, you said you were a chemist?

A. Yes.

Q. Did you learn anything about bacteriology in your course as a chemist?

A. Well, we learn a lot of things.

Q. I know you learn a great many things.

A. I am not a bacteriologist, but I know a great deal about bacteria. I have to.

Q. You know a great deal about it, but you do not qualify as a bacteriologist, do you?

A. No, not as a bacteriologist.

442 The Master: I will strike that answer then.

Mr. Schaefer: How about the preceding answer?

The Master: That is the one I am striking.

Mr. Gariepy: Will the reporter read the one that is stricken?

(The record was read as follows:

"Mr. Gariepy: Q. Is there anything in this adhesive that you could consider a culture for bacteria?

"A. There is nothing that would support bacteria life in the adhesive.")

Mr. Gariepy: Is that what is stricken, Master?

The Master: Yes. He is not a bacteriologist.

Mr. Gariepy: Q. You said that a certain milk was shipped in these gumwood barrels. Do you mean evaporated or condensed?

A. It is my understanding that milk used by bakeries, for instance, in the making of their bread—

Q. That is powdered milk, is it not?

A. No. A lot of it comes in in liquid form, because for some purpose we buy hundreds of milk barrels which have previously contained milk in them.

Q. What about the powder containers that the baker uses, such as powder for lemon pie and powder for other pies that they make up? Do you know about that,

443 whether they come in these containers or not?

A. I couldn't say.

Mr. Rall: Q. Are the containers that you ship this adhesive in new?

A. As I said previously, they are new gumwood barrels, in which a coating of wax is used.

Q. And they are not the barrels you have just referred to, that milk has previously been in, are they, Mr. Stern?

A. No, I just point that out, that we use the same type of barrel as that new milk is shipped in at the present time.

444 Mr. Gariepy: Q. What sanitary measures are employed in your plant with regard to the men working in making up this formula, Mr. Stern, in making up this adhesive, I should say?

Mr. Schaeffer: If the Master please, I don't like to make this type of objection, but I would like to ask counsel to stop leading these witnesses.

Mr. Gariepy: That is the first objection you have ever made to my leading him. I thought I was quite careful, in fact, Mr. Schaefer.

The Master: Go ahead.

Mr. Gariepy: Q. Mr. Stern are there any sanitary measures, rules or regulations employed in the plant in regard to the making up of these adhesives that you have just testified about?

Mr. Schaefer: There is another objection, on the ground the question calls for a conclusion of the witness.

The Master: Let him answer it.

A. We require our men to practice the usual sanitary measures.

Mr. Gariepy: Q. What are they?

A. Well, the men must wash their hands and wear clean clothes.

445 Q. What regulations do you have carried out with regard to them?

Mr. Schaefer: The same objection.

The Master: If any.

Mr. Gariepy: Q. If any?

A. We have none other than I have just mentioned.

Q. Have you facilities at the plant with regard to toilet facilities?

A. We have a modern clean lavatory.

Q. And is there just one for the whole group of employes, or how many do you have?

A. We have one large lavatory for all of the men employed in the factory.

Q. How many are employed?

A. About twenty-five.

Q. Do you have one separate for women?

A. We would only have women in the office.
Q. Have you a separate one?
A. Surely.
Mr. Gariepy: You may cross-examine.
Mr. Schaefer: I still will reserve cross-examination.
Mr. Gariepy: All right.
The Master: Subject to recall again.
(Witness excused.)
446 Mr. Hall: I would like to recall Mr. Kasper.
The Master: Well, he is right here.

C. J. KASPER, having been previously sworn and having testified, was recalled and testified further:

Direct Examination by Mr. Rall.

Q. You are the same Mr. Kasper who was just on the stand before Mr. Stern?
A. Yes, sir.
Q. And after you left the stand I asked you whether you were certain of your own knowledge that your testimony about the containers in which your adhesive was shipped?
A. Yes.
Q. Will you explain what the extent of your knowledge is regarding these containers yourself, and if you are not familiar with it, who is familiar?
A. I would like to correct myself on the statement I have made there in regard to the wooden containers. There are times when a customer will specify that he will want a steel barrel rather than a wooden barrel. These steel barrels are coated, and as I understand, these drums are sold also to people that sell milk.
Q. Coated with what?
447 A. That I couldn't say.
Mr. Schaefer: I move to strike that last answer of the witness.
The Master: I will let it stand, he knows there is a coat of some kind.
Mr. Rall: Q. Who in your organization can tell us about specific shipments in regard to the Richardson Company of the adhesive you described?
A. I would say the Division Manager, Mr. R. P. Bieler.

Q. Mr. R. P. Bieler, Division Manager?
A. Yes.
Q. Are you going to be in the city for the next few weeks so that you will be able to return here?
A. I sure will.
Mr. Rall: That is all.
(Witness excused.)
Mr. Gariepy: That is all the plaintiff has today, Master.
The Master: That is all the plaintiff has to put on today?
Mr. Gariepy: Yes.
The Master: Then we will adjourn without date until we hear from respective counsel.
448 Mr. Rall: There were certain exhibits that you had of these blanks. Are these marked?
Mr. Schaefer: Yes.
Mr. Rall: Defendants' exhibits 3 to 6, inclusive. Do you desire to offer them?
Mr. Schaefer: They have been admitted already.
Mr. Gariepy: Not number 3.
Mr. Schaefer: 3 has not been admitted?
Mr. Rall: The "identification" mark is removed.
Mr. Schaefer: I would like now to offer defendants' exhibit 3, so there won't be any misunderstanding about it.
Mr. Rall: I have no objection to defendants' exhibits 3 to 6 inclusive.
The Master: Just mark them as received.
Mr. Gariepy: In view of the fact that defendants' exhibit 3 was admitted, I will now offer plaintiff's exhibit 3 which was marked by the same witness who marked defendants' exhibit 3. I now offer 40 in evidence.
Mr. Schaefer: No objection.
The Master: It may be received.
(Said cardboard blank so offered and received in evidence was marked "PLAINTIFF'S EXHIBIT NO.
449 40" and is attached hereto and made a part hereof.)
Mr. Schaefer: There is one thing further, if the Master please.
The Master: What is that?
Mr. Schaefer: This case was set for hearing today, for the testimony of Dr. Rice of Philadelphia. We went to Philadelphia once to take Dr. Rice's testimony.
Mr. Gariepy: Lewisburg, Pennsylvania.
Mr. Schaefer: We went to Philadelphia once to take his deposition and he didn't appear at that time. The

case was set specially today to suit his convenience and he hasn't appeared today. I know from discussions with counsel for the plaintiffs in the two cases that he did not appear because counsel for the plaintiffs decided that they didn't want his testimony.

The Master: Today?

Mr. Schaefer: As I understand the letter that I received from Mr. Gariepy on that subject, they don't want his testimony today or at any other time. It seems to me that if Dr. Rice is an important enough witness so that we should go to Philadelphia to get his testimony, it is important for the Master and for the defendants to have
450 his testimony in the record here, and I would like to be clear as to whether or not the plaintiffs intend in the future to call him. The reason stated in the letter which I received was that his test mony would be merely corroborative on these points.

The Master: What is your understanding now as to the certain points? Are you going to call him?

Mr. Schaefer: No. My question is whether there is to be any further testimony on those points. That is the reason explained for not calling Dr. Rice, that on certain points we apparently have sufficient testimony without calling Dr. Rice.

The Master: How is it important to you to know whether they are going to produce other witnesses?

Mr. Schaefer: Well, if other witnesses are not going to be produced, I don't much care whether Dr. Rice testifies or not. There is a statement in Mr. Gariepy's letter to me which I found—after extensive conversation—that he (meaning Dr. Rice) "* * * can and will add little to the testimony already given by Dr. Sanborn with regard to paper caps, absorption and the other items referring to the Pure-Pak Container."

If that is the reason for not calling him, and which
451 we understand—that there will be no other testimony offered on those points—if so I don't care particularly whether he is called or not; but, if the reason we are not getting Dr. Rice is because we have enough testimony, and if the reason we are not getting him is that we have enough testimony on those points, then I am satisfied not to call him; but if the intention is to call other witnesses to testify on those same points, then I am a little curious as to why Dr. Rice is not here.

Mr. Gariepy: I will answer you by saying that Dr. Rice informed us on the 'phone that there are a lot of these tests taken from Dr. Sanborn's own reports and that he went to Geneva to work with Dr. Sanborn, and his experience is the same; but I don't mean that because of the fact that if he were here he would testify to the same things, that the plaintiff is going to be limited as to putting in any experiment or research work that we feel necessary. In other words, if he worked at Geneva with Dr. Sanborn on this thing and took Dr. Sanborn's theories and Dr. Sanborn's results and went to work and built up what he could on that subject, I don't see any logic in having him tell us about that, if Dr. Sanborn has already told us;
452 but, if we find other witnesses that have made advances in the science, tests and research work on this subject, I don't want to be precluded from bringing that in. That is the sum and substance.

The Master: You don't care to call Dr. Rice?

Mr. Gariepy: That's right.

The Master: I don't see how you can limit them in their testimony.

Mr. Schaefer: I have this thought in mind, then: I don't know what Dr. Rice will testify to, so far as I know, as no member or representative of the Board of Health of the City of Chicago has talked to him at any time since this case was instituted. I would like to have Dr. Rice called and I don't feel that I should have to vouch for his testimony. I would like to have him called as a Court's witness.

The Master: I don't suppose they would have any objection to having him called.

Mr. Rall: With the other prospective witnesses that we have who made independent research, it don't seem worth while to us to have Dr. Rice come here today, with the possibility that we wouldn't be able to complete his testimony. Dr. Sanborn took just about twice as long as we had expected.

Furthermore, I wrote my client a letter yesterday in
453 which I said that the City had shown a great interest in Dr. Rice and that I predicted that before this lawsuit was over we would see Dr. Rice appearing on the witness stand as a witness for the City of Chicago.

Mr. Schaefer: How did we show that interest, Owen? We went to Philadelphia. What other interest did we show?

Mr. Rall: Well, we understand that he was written to by someone purporting to represent the City.

The Master: There is nothing pending before me now. The witness has not been called, and if they don't want to call him, and if the City desires to call him, they are at liberty to do so, and I assume that if the City wants to call him as a Court's witness, that the other side will not object.

Mr. Rall: I don't think we ought to be committed in advance of his appearing here, to whether or not he is antagonistic or friendly to one side or the other.

Mr. Schaefer: I ask now that he be called as a Court's witness.

Mr. Rall: I object on the ground there has been no showing made that he is antagonistic to the City.

454 The Master: I don't think it makes much difference if you call him, I will let you examine him as an adverse witness if you want to.

Mr. Rall: He is not here and I submit that the Master ought not to rule. He has asked us whether he understands we are going to offer some more testimony on some points Dr. Sanborn touched on, and our answer is that we do intend to offer it, and we think it is better than Dr. Rice's investigations and closer to home so as not to justify the expense of bringing him here today.

The Master: If you want him here I will let you bring him here, and call him as a Court's witness, you to pay the expense of bringing him here—if you want that, any time you want to subpoena him. I don't know whether your subpoena will bring him here, but if you want him in here and can get him here, we will let him come in as a Court's witness.

Mr. Schaefer: If the Master would ask him to come. We don't care what he is going to testify to, but if the Master would ask him to come, and pay him the amount that the plaintiffs were going to pay him, we will undertake to pay that amount and to pay his expenses, whatever he wanted, unless the plaintiffs want to share that

455 expense if he is called as a Court's witness; but I don't want to get into communication with him now and have it said that I have been in communication with Dr. Rice. I would like to have the Master fix the time when he may come.

The Master: I am perfectly willing to do that and I

don't think the other side cares much whether you bring him in that way or not.

Mr. Rall: That is quite correct.

The Master: They said they wouldn't call him, first, because it is expensive to bring him here.

Mr. Schaefer: It was expensive for us to go over to Philadelphia.

The Master: They say that they have arrived at the conclusion that his testimony would be largely corroborative or a repetition of Dr. Sanborn's testimony. That is the reasons they give now. If you want to bring him in here, I can't see where they can have any objection.

Mr. Rall: No objection.

Mr. Schaefer: Will the Master write him, if we can get his name and his address? Will the Master communicate with him?

The Master: Yes, if you want him, I will be glad 456 to do it.

Mr. Schaefer: Yes, sir, we do.

The Master: Give me his address.

Mr. Gariepy: His address is Bucknell University, Lewisburg, Pennsylvania. But, he is going to Geneva.

The Master: Give me his initials.

Mr. Rall: John W. Rice.

Mr. Gariepy: He will be at Geneva until the latter part of August and will be in Canada two days after leaving there. I don't know where he will be next. His name is John W. Rice, Professor of Bacteriology, Bucknell University, Lewisburg, Pennsylvania.

The Master: That is all. We will adjourn without date.

(Thereupon, at 4:00 o'clock p. m. on June 5, 1939, the further hearing in the within cause was continued without specific date.)

457 (Caption)

Monday, June 26, 1939.
10 o'clock A. M.

Met, pursuant to adjournment.

Present:

Mr. Gariepy,
Mr. Rall,
Mr. Schaefer,
Mr. Horan.

458 JOHN W. RICE was called as a witness and, being first duly sworn, testified as follows:

Examination by the Master.

Q. Please state your name.
A. John W. Rice.
Q. Where do you reside?
A. My permanent home is in Louisburg, Pennsylvania.
Q. Do you have any official position with any institution?
A. I am professor of bacteriology, Bucknell University.
Q. You were requested by me to appear here today as a witness concerning the subject matter of this suit?
A. Yes, sir.
Q. You are here and I will turn you over for examination to Mr. Schaefer of the Corporation Counsel's office of the City of Chicago.

Examination by Mr. Schaefer.

Q. How long have you taught at Bucknell, Doctor?
A. Since 1916.
Q. Continuously?
459 A. With the exception of a break during the War, when I was in the army service.
Q. Have you had any teaching experience in any other institution?
A. I taught summer sessions at Columbia University and at Juniata College.

Q. Where is that, Doctor?

A. That is at—I feel like calling it Juniata all the time, but it is near Juniata. I cannot say the name of the place right now.

Q. What state is it in?

A. It is in Pennsylvania. Huntington, Pennsylvania, that is right.

Q. At Huntington, Pennsylvania?

A. Yes.

Q. And all of your work, all of your teaching work has been in bacteriology?

A. General bacteriology in the beginning and then bacteriology after I got my doctor's degree.

Q. And where did you get your doctor's degree?

A. At Columbia University.

Q. In bacteriology?

A. In bacteriology, yes.

Q. Where did you do your under-graduate work, Doctor?

A. Part of it at Columbia University and part of it at Bucknell; well, practically all of it at Bucknell, and the master's degree work at Columbia University.

Q. Have you done any bacteriological work in con-
460 nection with paper containers, Doctor, for milk?

A. I have.

Q. Will you state what that work has been?

A. The work has been in the nature of the determination of bacteria found in the paper or fabric from which the containers are made; some rinse test work on the containers themselves, and cultural work in the way of broth cultures.

Q. When did you begin that work, Doctor?

A. On paper containers I began in 1931.

Q. And you worked at it not continuously, I suppose, since then?

A. No, sir.

Q. But you worked at it fairly steady during the intervening years?

A. Of course, it had to be spliced into my teaching program, which meant that there was some work going on practically all the time, with the exception of the time that I was in the hospital eight years ago which took about a year and a half to get rid of.

Q. Where was that work done in the main, Doctor?

A. Most of that work was done at Bucknell University.
Q. Are you engaged in that work now?
A. Yes.
Q. And where are you engaged in it now?
A. I am working at Bucknell University part of the
461 time and at the New York State Experimental Station, in the Agricultural Experiment Station at Geneva, during the summer months.
Q. Have you worked at the experimental station any summer other than this summer?
A. Last summer, for two months.
Q. From the work which you have done, Doctor, have you formed an opinion as to what is the principal source of contamination, bacterial contamination, of paper containers for milk?
A. The principal source, I would say, is in the fabric that goes into its manufacture.
Q. What about the water supply? Do you include that in the fabric?
A. Yes. You have to prepare your paper from water. It is a floated process.
Q. The principal source is the pulp, plus the water?
A. Yes.
Q. Efforts are being made to control both of those sources of contamination, are they, Doctor?
A. Yes, they are.
Q. How much water is used in paper plants; do you have any notion?
A. Well, I have not in connection with the paper going into container board, but I have with reference to the
462 paper going into bottle cap board. In one case there was 1,200,000 gallons used in one plant a day, and in the other one 800,000 gallons a day.
Q. In your opinion would the amount of water used by plants which manufactured paper board for containers be greater or less?
A. I can't answer that. I presume it would be about the same.
Q. When you analyzed the water used in paper mills did you encounter bacterial contamination?
A. Yes.
Q. What was the nature of the bacteria that you encountered there?
A. Well, I will have to speak entirely with reference

to the bacteria in connection with bottle cap board, because I made no plant surveys, as far as paper container board is concerned. Dr. Sanborn is doing all of that work at the station.

Mr. Gariepy: Mr. Schaefer, may I interpose an objection; that the Doctor confine himself with reference to the container in question here and the mill or plant where these experiments or findings were had.

Q. Can you name those, Doctor, what container and what mill it was you have reference to in your state-
463 ment?

A. I said I had no experience with mills in connection with the manufacture of board going into containers.

Q. No mills at all?

A. No.

Q. With regard to this water that Mr. Schaefer just asked you about—

A. I said at that time that that was in connection with the manufacture of bottle cap board, not paper container board.

Mr. Schaefer: Q. Now, Doctor, how does the manufacture of bottle cap board differ from the manufacture of container board?

A. Practically in no way, as far as I understand the situation.

Q. Did you ever encounter any E-coli in the water at the calender stacks at any bottle cap board manufacturing plant?

A. Yes, sir.

Mr. Gariepy: I am going to object, unless he tells what plant he has in mind, because we are only concerned with the Cherry River Paper Company's product here. That is the only inquiry we are making. Things he might have found, Master, at some other mill that have no relation to the matter in issue are not material here.

464 The Master: What mill was it?

Mr. Schaefer: May I say just a word here, Master? It may be that the witness does not want to disclose the particular mill, although I understand that the condition has been rectified. My point is here that we are not limited to one particular mill, and the witness has testified that the process of making paper board for bottle caps is substantially the same as the process for making paper board for containers.

The Master: Your examination is designed to show that the conditions which he found may be found in other places than the one that he is talking about?

Mr. Schaefer: Yes.

The Master: It may be that the circumstances at this particular place were exceptional and I assume they have a right to go into that. Of course, I might let you go ahead and examine and let Mr. Gariepy cross-examine and bring out any exceptional facts, if he desires.

Mr. Gariepy: My point is, Master, that these general statements in here are not instructive nor informative to you, or counsel or me, unless they pertain to the matters in inquiry here. They are general conclusions and general statements.

465 The Master: I am not so sure about that. It may be that if paper board is permitted to be used for containers, the City might say, "We don't have to go ahead and examine each particular company to find out every time whether its product is free from bacteria or not. We just want to find out whether there is a general condition here which may require and justify us in framing general rules." Now, if the condition is sufficiently imminent or possible or probable in these cases, there may be cases where the City has to go ahead and examine in each instance the quality and the kind of manufacture and the kind of water, in order to ascertain whether there are bacteria in the product.

Mr. Rall: The problem is no different than with bottle caps or with bottles. Any of those things are subject to contamination; everything on earth is. The fact he may have found contamination somewhere would not prove either that the City has control over this or that our product was contaminated.

The Master: You may cross-examine on that objection.

Mr. Rall: If this lasts a day and a half, or any such length of time as that, it seems to me it would make
466 it clearer if, as the witness goes along, he tells where he found those conditions.

The Master: Dr. Rice, do you have any objection to stating where you found those conditions?

The Witness: I think there is no objection to that.

The Master: Go ahead and let him state.

The Witness: One case was at the Fulton plant of the Oswego Falls Corporation and the other was Utica. I

am trying to recall the name of the corporation, which I right now cannot do.

Mr. Schaefer: Now, will you read my last question?

(The record was read by the reporter as above recorded.)

Mr. Schaefer: Q. What is E-coli, Doctor?

A. May I give you the information on this other company?

Q. Yes.

A. It is the Foster Paper Company.

E-coli is an intestinal organism which is used as an indication of pollution of water supply.

Q. What type of pollution does it indicate, Doctor?

A. It usually indicates foecal contamination.

Q. E-coli is a form of bacteria that inhabits the intestinal tracts of man and animals?

467 A. Yes.

Q. In the course of your investigation did you ever have any occasion to run parallel tests of the bacterial counts of milk samples in paper containers and in glass bottles?

A. Yes.

Q. When was that, Doctor?

A. The purpose of the tests—

Q. When?

A. When?

Q. Yes, when was that?

A. Those tests were run in 1934 and 1935, I think, on the general setup, and in 1937 and 1938, on the more recent studies.

Q. Why did you run parallel tests in paper and in glass?

A. To discover what kind of comparison exists between bacterial counts in milk housed in these two types of containers.

Q. Why did you use pint glass milk bottles?

A. I didn't get that.

Q. Why did you use pint glass milk bottles in those tests?

A. On one series of tests there were pint glass milk bottles used because they were taken from my laboratory, sterilized by steam pressure, and I knew they were sterile. On the first setup we used commercially cleansed and sterilized milk bottles, which turned out not to be cleansed

468 and sterilized properly by control tests.

Q. Why did you use glass bottles at all?

A. We had to have some basis of comparison, and on the basis of usage I suppose that test was made.

Q. What do you mean by the basis of usage?

A. The glass bottle has been accepted as a container for the milk.

Q. That is, the glass bottle is the standard container for milk?

A. I hesitate to use the word "standard."

Q. You have used it in describing these tests, have you not, Doctor?

A. I have used the word, but I have come to modify my opinion since.

Q. Will you describe those tests, Doctor?

A. In those tests making comparative counts of milk in sterile glass containers and paper containers, the glass bottles were prepared in my laboratory and properly cleansed and then subjected to a steam pressume of 15 pounds, to render them sterile. They were taken in closed condition to the plant and samples were taken in these containers parallel with the samples that were taken from the bottling machine, which was designed to bottle milk in paper containers alone, and from those samples drawn they were taken, in iced containers, to my laboratory and comparative counts made by standard methods.

469 Q. Now, the other tests where you used commercially cleansed glass bottles.

A. There the cleansing was done in the milk plant using a three per cent alkali wash and they were subsequently steamed. There was no control, however, as to the time of steaming.

Q. And you ran parallel tests in that last experiment with how many types of paper containers?

A. Just one. The last test was the one type of container.

Q. Have you ever run any tests in which you used glass as a standard and more than one type of paper container?

A. Yes, sir.

Q. Will you describe that test?

A. That was the series of tests in which there were at least four types of milk containers used made of paper board. Two of those were of the open type, meaning that they were conical containers, with the opening exposed to the air or allowing air exposure. Two of them were factory sealed.

Q. What did your grand totals and averages as a result of those tests show as to whether the glass bottle or the paper container was the greater hazard in the
470 possible contamination of milk in those containers?

Mr. Rall: Just a minute. Are you referring to the commercially sterilized or to the other one?

Mr. Schaefer: I am referring to the last tests, which was the commercially sterilized glass.

The Witness: On the commercially sterilized glass—

Mr. Schaefer: Q. I am referring, Doctor, to the test that you reported to the sixth annual meeting of the Pennsylvania Association of Dairy and Milk Inspectors.

A. That is the older test, where there were four types of containers used.

Q. Yes. I am referring to that test.

A. In that case practically all of the comparative counts in glass were lower than the counts in paper containers.

Q. Are you satisfied as a bacteriologist with paper containers in their present stage of development?

A. No.

Q. Is there a problem in connection with the application of paraffin to paper containers?

A. Yes, there is.

Q. What is that problem, Doctor?

A. It is a matter of adequate coverage of the milk contact surfaces.

471 Q. Will you describe that a little more in detail, Doctor?

A. On the application of a moisture-proofing material to paper fabric, one of the important things is to see that the moisture-proofing is uniformly applied to at least the inner surface of the container where it comes in contact with moisture in a great concentration than it would on the outside.

Q. And, generally speaking, has an even application been achieved?

A. Not generally speaking.

Q. In making cultures of paper board used for paper containers, Doctor, have you ever encountered any off-odors from the culture plates?

A. Those off-odors that I have described once upon a time were in connection with bottle cap cultures.

Q. Have you ever encountered any in connection with paper board or paper containers?

A. Not that I recall.
Q. Have you ever made any effort to find any?
A. Yes.
Mr. Schaefer: That is all.

472 *Examination by Mr. Gariepy.*

Q. Doctor, you just answered Mr. Schaefer's question with regard to the satisfaction or lack of satisfaction that you had with paper containers. You said that you were not satisfied with the progress made in the matter of the manufacturing of paper containers. Calling your attention to your recent article read at the Fourteenth Annual Convention of the Pennsylvania Association of Dairy Sanitarians contained in this pamphlet, is that your article and your pamphlet?
A. Yes, sir.
Q. I will call your attention to page 46 thereof, and do you recall this statement by you:
"When considered from the public health angle, these paper containers are superior to the glass milk bottle, since there is no chance to spread infectuous disease organisms from household to household by a single service container."
Do you recall that statement?
A. Yes, sir, and I still hold to that. I think you misquoted—I beg your pardon.
Q. No, I am reading from your conclusions here.
473 A. No, I mean you misquoted in the question. The question, as I understood it from Mr. Schaefer, was as to whether or not I was satisfied bacteriologically with the present status of paper containers.
Q. And you said you were not satisfied?
A. And I said I was not satisfied.
Q. Are you satisfied with the bacteriological condition of glass containers?
A. No, I am not.
Q. How, in your opinion, does the paper container measure up to the glass container?
Mr. Schaefer: I object to that, if the Master please, for this reason: The condition of the glass or paper container, as I understood the witness to testify, depends on the method in which the glass container is handled and the cleansing or sterilizing process to which it is subjected. In

the absence of testimony to the effect that the witness is familiar with that process and the condition of the containers in the City of Chicago, I think any question on that subject would be objectionable.

The Master: I will sustain the objection.

Mr. Gariepy: May we call your attention to the fact that Mr. Schaefer's questions were asked of this witness without regard to any territorial limitation in relation
474 to the paper bottle and glass bottle. I made an objection as to that a while ago on the ground of having us confine ourselves to the paper in question here, and you overruled me.

The Master: He asked about the glass container.

Mr. Gariepy: The record will show that it was in regard to the counts in the glass and the counts in the paper. If your are going to take glass as an acceptable standard that the City is now permitting to be used, we have certainly got a right to inquire into the matter of that standdard, regarding either glass or paper; otherwise we have no scale or measuring guide.

The Master: You might ask him in regard to the particular cases he has before him for investigation. You might confine your questions to that. But you are asking him a general question now. It may be that the conditions as to glass containers in the City of Chicago are very much similar to those in other places, or vice versa.

Mr. Gariepy: I will ask him that.

Q. Do you know anything about the condition as to cleaning glass containers in the City of Chicago?

A. I do not.

Q. Then your answers that you gave Mr. Schaefer
475 in regard to glass and paper containers are based on no knowledge regarding conditions in Chicago?

A. That is right.

Q. Are you familiar with the conditions in regard to the methods and means or technique employed in cleaning glass bottles as used in the City of Chicago in regard to milk?

A. No, sir.

Q. Calling your attention, Doctor, further to pages 46 and 47 of your report, which I showed you, given to the Pennsylvania Association of Dairy Sanitarians, Fourteenth Annual Report, entitled, "Recent Studies of the Bacterial

Content of Paper Milk Containers, John W. Rice, Ph.D.", is this your statement:

"—a standard milk container in the fluid milk market on the distinctions of high inherent sanitary quality and the sound public health principle involved in the single-service container."

A. Yes, that is my statement.

Q. Do you still believe that to be true, Doctor?

A. I believe it is true, yes.

Q. Did you further make this statement in your conclusions with regard to this 47 page report and these studies concerning the comparison of the glass bottle with
476 the paper bottle:

"Careful checking of every phase of the development of the container by bacteriological methods have contributed to the production of a paper milk container which compares very favorably with sterile glass bottles as a sanitary receptacle for milk." Is that your statement?

A. Yes, sir.

Q. Do you still believe that to be true?

A. Yes, sir.

Q. What do you mean by the use of the word "sterile" in that statement in your conclusions, Doctor?

A. That is absolute sterility.

Q. And is there any such thing in the milk bottle industry or in the milk industry where bottles are used as absolute sterility?

A. Yes, there is that possibility.

Q. And is that commonly found daily in the use and sale of milk at retail or wholesale, absolute sterility?

Mr. Schaefer: That is objected to.

Mr. Gariepy: He has used the word. We ought to have the right to understand what he means.

Mr. Schaefer: But we are dealing with the conditions in the City of Chicago.

477 The Master: Outside of Chicago, in cases that have come to his knowledge.

Mr. Gariepy: I will repeat the question.

Q. Is there any such thing that you have found in the daily use of milk bottles in the milk industry as absolute sterility?

The Master: I will sustain the objection. That is too broad. Let us confine the question to cases that have come under his observation.

Mr. Gariepy: Q. All right, taking cases that have come under your observation, Doctor, taking milk from the dairies, your samples, in the ordinary course of events in the dairies?

A. I have found absolute sterility.

Q. In how many cases and where?

A. The location was in the milk control area of which I am president, in central Pennsylvania.

Q. And when was that?

A. This was last May and about fourteen months previous to that. A complete survey.

Q. Do you know anything about that condition of sterility with regard to glass milk bottles in Chicago?

A. I do not.

Q. Have you made any study in regard to the conditions here?

A. I have not.

The Master: Q. But in your district you say that 478 bottles were absolutely sterile?

A. Some bottles were absolutely sterile.

Q. In your district did you find that paper containers were absolutely sterile?

A. That question hardly applies, Master, because there is only one dairy in the entire district using paper containers.

Q. Taking that one dairy, did you find any of their containers absolutely sterile?

A. That is the same container that I am reporting on right here.

Q. I don't remember the results.

A. You see, it is impossible to get a paper container that has been put in a tray and make a sterility test upon it, because it has already been used as a package for milk, so unless you go to the plant and have blanks made on the same machine, you have no possibility of comparison.

Q. Did you do that?

A. No, sir, I did not, in this case.

Mr. Gariepy: Q. Doctor, what paper board did you perform these tests on, when you made answer to the inquiry that Mr. Schaefer gave you on counts?

A. In that report you are quoting there it is Cherry River board.

479 Q. And with regard to Cherry River board, I call your attention to page 28 of your report, where you make this statement:

"The first stock board for these closures—"

By closures I assume you mean the containers—

A. No, the closure is the portion of the container which is placed in the head of the container at the time of the filling of the package on the filler, the milk filler.

Q. Is that the two and a half inch scored part that flops over, that is, the head of the container?

A. That is the head of the container, yes. That was made by another company.

Q. That was not made by Cherry River?

A. That was not made by Cherry River, no, sir.

Q. Then does this statement apply to Cherry River board:

"The first stock board for these closures which was submitted for test was practically twice as heavy as that intended for sides which had previously been tested by us.

This stock board was distinctly laminated in construc-
480 tion, showing white outer surfaces and a darker center. When split apart the internal lamina revealed partially repulped old print paper."

A. That was a different source than Cherry River.

Q. And did you ever in any of your experiments and in your research work find any old print paper in Cherry River Paper Company stock?

A. No, sir.

The Master: Q. Did you ever investigate any Cherry River stock?

A. Yes, sir, I have split it down into lamina many times.

Mr. Gariepy: Q. Taking this report, Doctor, and the results of your tests in here, on page 5 you report bacterial findings on closures for paper milk bottles—jobbers stock. What do you mean by jobbers stock?

A. That was material that was jobbed to the Dixie-Vortex Company.

Q. Page 5?

A. Yes, sir.

Q. Dixie-Vortex Company?

A. Yes.

Q. What was that stock made out of, if you know, as to quality?

A. The quality was poor.

Mr. Schaefer: Off the record, just a minute.

(Discussion had off the record.)

481 Mr. Gariepy: Q. Does the same apply, Doctor, to your findings concerning odors, on pages 6 and 7? That was page 5, the one I just asked you about.

A. This is a continuation of that one. The whole table runs through all of those pages.

Q. And did any of that apply to the Cherry River Company stock?

A. No, sir, it did not.

Q. With regard to your statement on page 8, Doctor, concerning this stock and characterizing it or describing it, you made this statement:

"It is also quite obvious that the paper board from which these closures were 'drawn' carried general contamination throughout the entire web as indicated by the frequency of bacterial or mold growth from the cut edge of the flange, and the sharp bends forming the flanges. It is evident also that the paraffining, or waxing, quite successfully sealed the outer and inner surfaces of the closures where the fabric was not sharply bent or cut."

Do you still adhere to the same conclusions with regard to this stock that you used there?

A. Yes, sir.

Q. And none of this was virgin spruce pulp or
482 Cherry River Paper Company stock?

A. It was not Cherry River Paper Company stock.

Q. Now, with regard to the cultural tests on samples taken from board from which tops were formed, shown on page 9, with regard to bacterial growth and sterility and also on pages 10 and 11, Doctor, will you look at that and tell me whether any of those tests in regard to bacterial growth and sterility applied to Cherry River Paper Company stock?

A. I cannot answer that.

Q. You don't know what stock it was?

A. No, I do not.

Q. These show with regard to odor of plates and bacterial counts practically absolute sterility and absence of odor, do they not?

A. That is right. That is—

Q. What was your answer, Doctor?

A. That is right.

Mr. Schaefer: Did you finish your answer, Doctor?

The Witness: I meant to say that I do not know the absolute identity. The company did not reveal the absolute identity of that stock.

Mr. Gariepy: Q. With regard to the cultural tests shown on page 11, taken from board from which the samples are formed, the tests are for, first, bacterial growth and, second, for odor of plates, as shown by
483 page 11. Can you tell whether that refers to any Cherry River Paper Company stock?

A. That is Cherry River Company stock. I used that for the side walls.

Q. And does that show a condition practically of absolute sterility and absence of bacterial growth and absense of odor?

A. Yes, sir.

Q. Now, calling your attention, Doctor, to Table No. 7 on page 17, bacterial counts on nested paper milk bottles, were any of those paper milk bottles the Pure-Pak container?

A. They were not.

Q. Do you know whose container they were that you performed these tests and made these reports on?

A. They were made by the Dixie-Vortex Company.

Q. And is that container made out of the same quality of stock, if you know, that the Cherry River Paper Company stock is?

A. It is the Cherry River stock, the side walls. The top is that previous report.

Q. On pages 13 and 10 and 11?

A. That is right.

Q. With regard to page 17 and the tests that you made concerning bacterial colonies per bottle, would you say that the results of those tests show a condition of
484 acceptable sterility in the trade.

Mr. Schaefer: That is objected to.

Mr. Gariepy: He is here as an expert, Master, and he performed this test. He is qualified to testify whether it is sterile or not.

A. What is the question?

The Master: Read the question.

(Pending question read by reporter.)

Mr. Gariepy: Delete the word "trade" and include therein among public health authorities governing the control of milk in cities.

Mr. Schaefer: That is objected to, as well.

Mr. Gariepy: That is the test.

The Master: Read it again.

(Question read, viz:

"With regard to page 17 and the test that you made concerning bacterial colonies per bottle, would you say that the results of those tests was a condition of acceptable sterility?")

Mr. Gariepy: Q. Doctor, will you look at page 17 of your report with regard to the table number 7, concerning the bacterial counts on nested paper milk bottles, and tell me whether the result as shown in that table of tests performed by you show accepted sterility, or acceptable sterility, as considered and used in the matter of qualifications among public health authorities for cities and villages?

485 A. No.

Q. What is standard, if you know, that they have?

A. There is no standard for tests of this sort, so far as I know.

Q. Will you look at the summaries of table seven, Doctor, contained on page 19, and describe what you mean under the "F" series and the "P" series, with regard to the comparison of the glass bottle with the paper bottle?

A. This is not a comparison between the glass and the paper bottles. This is an attempt to show that these nested containers are filled with water and incubated for six hours, and covered with a fibre bottom or closure, that there is a difference in the bacterial count between those covered with fibre closures and those covered with sterile petri dish closures. It was nothing more than another way to show those closures were inferior stock.

Q. Do you know anything about whether paper bottles are ever nested in the trade as commonly used?

A. Certain types are.

Q. Those are the conical types that you referred to?

A. Yes—well, with one modification.

Q. What are there other than conical types, nested?

A. This is a conical type container which is nested in reverse, it fills through the bottom and the closures
486 are put on in the bottom and then it is put upright and put in service.

Q. Did you ever perform any such test with regard to the square Pure-Pak container?

A. There is no possibility of making a test like that.

Q. That is because it is not nested?

A. It is not a nested container at all.

Q. It has no closure?

A. The closure is a part of the container.

Q. On table number eight, Doctor, you have a table listing the results of your experiments on bacterial counts of milk in paper bottles and in glass bottles, and on the bottom you sum up the matter of averages. Will you look at that table as shown on page 21 and tell me whether that is a true representation of the result of your experiments?

A. It is.

Q. How does the average there with regard to the bacterial counts show up with regard to the glass and the paper containers?

A. There is a slight advantage for paper.

Q. What per cent?

A. It would work out on percentage basis.

Q. Was that on board from the Cherry River
487 Paper Company?

A. Yes, sir.

Q. This report is in 1938; when were these tests performed as shown in this report, Doctor?

A. They were done the preceding year.

Q. These samples here that you list on table eight were aged for twenty-four hours for what purpose?

A. To simulate commercial conditions; that is, milk is pasteurized and bottled and placed on sale the next day, usually.

Q. Referring to page 20, in making the tests with regard to comparing the paper bottle with the glass bottle, you made this statement:

"The glass bottles used in these tests were plant washed in a pressure type bottle washer."

Doctor, I show you document which I will ask to have marked "Plaintiff's Exhibit 42 for identification (handing document to the witness).

(The document referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 42 for identification.")

Q. (Resumed.) Is that what you call, Doctor, a pressure type bottle washer, referring to Plaintiff's Exhibit 42 for identification, entitled "Model C—Soaker Bottle Washer"?

488 A. No. This is a soaker type bottle washer.

Q. How does that type of bottle washer differ from the pressure type?

A. In this type, the alkali wash is in contact with the

inside and outside for a period of time, and in the pressure type the rinses are injected into the nozzle, by a spray on the outside, by nozzles.

Q. Which do you consider the most effective and better, so far as sanitation and getting a better wash?

Mr. Schaefer: That is objected to as immaterial.

Mr. Gariepy: I think it is material.

The Master: What is the question?

(Question read by the Reporter.)

Mr. Gariepy: Which he says he considers superior.

The Master: Which two are you talking about?

Mr. Gariepy: The pressure type—

The Witness: This is the soaker type.

Mr. Gariepy: This is the soaker type?

The Master: I will let him answer.

A. That couldn't be answered yes or no.

Mr. Gariepy: Q. Do you have an opinion as to which is the better type of bottle washer, so far as sterility is concerned?

A. Properly serviced, I think the soaker type washer is the better.

489 Q. Following on with your statement, Doctor:

"They first received a cold rinse, then were washed in a hot solution (approximately 180 degrees F.) of 1.25 per cent trisodium phosphate and 0.6 per cent alkali, after which they received a hot rinse followed by sterilization with live steam."

Do you know whether that is a common customary way for washing bottles?

A. It is, for the pressure type washer.

Q. Do you know whether that is the adopted method or technique used in the City of Chicago for washing glass milk bottles?

A. I don't.

Q. You stated, further, Doctor:

"Bottles washed in this fashion are considered commercially sterile, but actually in bacteriological tests yield from a few hundred to several thousands of bacterial colonies per bottle."

Is that the result of your conclusions on these bottles, considered commercially sterile?

A. That is the result of the tests done at that plant on their washed bottles.

490 Q. How many hundreds or how many thousands

of bacterial colonies per bottle are considered acceptable, if you know, to health authorities?

Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: Q. Doctor, after performing these tests and comparing the glass bottle to the paper, you made this statement:

"It will be noted that the grand average bacterial count of twenty-six samples of milk in paper containers is approximately four thousand less than the grand average bacterial count of a similar number of samples put up in commercially sterile glass bottles." Is that true?

A. That is true.

Q. Further, in this report, on page 28 you have a statement with regard to "The Chip-Board Carton." What do you mean by that?

A. It is a very inferior type of fibre board.

Q. What has that to do, or, what relation has it with the milk itself?

A. Well, that type of board is usually used to house containers, that is, packages.

491 Q. After the containers are filled with milk and ready to be taken from the dairy?

A. Well, that and also to act as packaging for parts of containers going into the dairy, such as bottle caps and so on.

Q. Well, to be more definite, that is the large brown carton in which the containers are placed after they are filled at the machine; is that right?

A. Well, that is one class.

Q. Did you ever hear of a chip-board carbon being used for containing the milk, next to the surface, itself?

A. No, sir.

Q. Have you ever performed any tests, Doctor, with regard to the carton, or chip-board carton, as you put it, that is used by Fieldcrest Dairies in this lawsuit with regard to housing, as you put it, the filled bottle of milk in paper containers?

A. No, sir.

Q. On page 36 of your report of 1938, just referred to, you make this statement:

"These tests (referring to the tests concerning the bacterial findings on new closures from the jobber and from the home factory) indicated that the inner or milk

492 contact surfaces were 93.9 per cent sterile."

Do you remember that statement?

A. Yes, sir.

Q. Is that a true statement, as result of your tests?

A. Yes, sir.

Q. Further, with regard to closures from another stock paper, on page 36 it appears that you make this statement in your conclusion:

"It will be noted from this table that eight out of the forty samples tested were sterile throughout—a complete sterility of 20 per cent. But better still only one closure yielded any growth from the inner or milk-content surface—a milk surface sterility factor of 97.5 per cent."

Do you remember that statement on page 36 of your report?

A. Yes, sir.

Q. Is that a true statement?

A. Yes, sir.

Q. Of your conclusion with regard to those tests?

A. Yes, sir.

Q. With regard to half pint sized shells, Doctor, and tests that you made and experiments as related on
493 pages 36 and 37, you made this statement:

"The fibre closures used on the one series were those obtained from a jobber, the other were those which showed high sterility and were made in the home factory."

What is the significance of that statement?

A. It meant that the factory was attempting to control their difficulties, that is, the converter.

Q. Have you any evidence that there was any effort made, or are you just basing that on the difference in the result of the tests?

A. No, but they actually cooperated in preparing new material when I asked them to.

Q. But there wasn't any doctoring up, was there?

A. No. Material obtained from a different source.

Q. There was no build-up on the part of the factory?

A. No, sir.

Q. Further, with regard to these half pints in these tests that you performed, concerning bacterial counts on nested paper milk bottles as shown on table 14 on pages 38 and 39, is the result shown concerning bacterial colonies per bottle, a true report and your true finding?

A. Yes, sir.

494 Q. What does that show with regard to absolute sterility or commercial sterility as you use it?

A. This does not apply to glass bottles.

Q. No, it is with regard to paper; that heading shows that?

A. Yes. But, as I explained to you before, this contact test is not approved as a standard technique.

Q. It is not approved as a standard technique?

A. No, sir.

Q. How does it differ from the test which is considered a test of standard technique?

A. Standard technique which would be similar to it would be the broth culture test.

Q. Did you perform that?

A. Not on these containers.

Q. On page 42 of your report, Doctor, entitled "Comparative tests of Milk in Glass and in Paper Bottles on a Commercial Basis"; in describing the making of these tests you state:

"The milk was placed in the quart sized glass bottles by a special draining spout which was substituted of a paper container under the valve of the filler tank."

Why was that procedure followed?

A. It was the only way we could fill a quart glass
495 bottle on this type of filler. It was designed to fill paper containers only.

Q. And that required the stopping of the automatic bottle filling equipment?

A. Yes, sir.

Q. Which is not the usual thing done in the plant?

A. No, sir.

Q. Further, after describing the employed method above quoted on page 42, you state as follows:

"We were not satisfied with the degree of sterilization that was achieved in the glass bottles as was indicated by the bacterial count of the control bottle. The relatively high bacterial counts both in the raw milk and the finished product was caused by pin-point colonies."

What type of glass bottles was that, Doctor—those that were filled in the usual, customary method of filling glass bottles?

A. No.

Q. And sterilized in the regular way, or what method?

A. They were filled as indicated in the first quotation there.

Q. With this draining spout?

A. Yes, sir, they were cleansed by a 3 per cent
496 alkali wash and subsequently steamed.

Q. After that was done, wasn't this the result and the summary of your finding:

"It will be noted in the summarization that the bacterial counts obtained from milk in paper containers was lower in every way than corresponding counts made on milk in glass bottles."

A. That's right.

Q. On page 43?

A. Yes.

Q. This table number 18 shown on page 43 correctly portrayed your findings with regard to the bacterial colonies per cubic centimeter in glass bottles and in paper bottles?

A. That is a correct record.

Q. Per cubic centimeter, that is?

A. Yes, sir.

Q. On page 44, under table number 19, Doctor, you list a schedule of the result of your tests under the heading "Comparative bacterial counts of milk in Paper Bottles and in Sterile Glass Bottles—bacteria colonies per cubic centimeter; does that table correctly portray the result of your experiments in comparing both receptacles?

A. Yes, sir.

497 Q. The same with regard to your comparisons as shown on page 45?

A. Yes, sir.

Q. Page 46, summing up this test and comparing the paper bottles and the sterile glass bottles, you make this statement:

"It is obvious from the data presented that the coil vat is the part of the plant equipment which harbors these thermophilic bacteria, and that they are spreading into all the plant equipment. In spite of this handicap it will be noted that the milk put up in paper containers presents a ratio of average counts very closely comparable to the average bacterial counts of milk put up in laboratory sterilized glass bottles."

Does that represent your true judgment?

A. Yes, sir.

Q. These thermophilic bacteria are heat-loving bacteria, or those that are more heat-resisting?

A. Heat-loving.

Q. That is the greek and latin origin of the word?
A. Yes.
Q. They will resist the heat better than the ordinary bacteria?
A. They really develop in that temperature.
498 Q. And they will breed?
A. Yes, sir.
Q. Are they pathogenic bacteria, Doctor?
A. So far as we know—not.
Q. Now, have you ever been to the Cherry River Paper Company and made any investigation with regard to finding water in the stacks?
A. No, sir.
Q. Do you know from your experience and experiments and observation on the paper bottle as to whether there is at the present time a constant advancement with regard to the type of design, quality of paper and sanitary methods being employed?
A. Yes, sir.
Q. During the time that you have become acquainted with this subject and made a study of it, how much advancement would you say that you have found?
A. Very extensive.
Q. On the top of page 12 of your 1938 report you make this comment:
"It will be noted that in these series of tests involving 70 units taken from a total 514 sheets of stock board only four samples showed any growth of bacteria or molds. This would indicate a sterility factor of approximately 94 per cent by this method of testing."
499 Is that your statement?
A. Yes, sir.
Q. Is that on Cherry River Paper Company stock or board?
A. I believe it is. It can be verified.
Q. Will you look at that, Doctor?
A. Yes, sir.
Q. What was the sterility factor, Doctor, in these tests on this paper board?
A. Do I hear your question right?
Q. I withdraw it. Were your results, with regard to these experiments that you performed, quantitative?
A. Yes, sir.
Q. Were the bacteria that you found in performing these tests of any sanitary significance?

A. Not in that case.

Q. Did you compare the paper container in this case with the glass bottles in parallel series?

A. Well, do you mean with reference to that particular test?

Q. Yes, Doctor.

A. It is impossible to make it.

Q. You didn't do it—the answer is?

A. No.

Q. It appears from these various tests and tables reporting the result of your experiments, that you found an average of fewer bacteria in the milk in the paper bottles than in the glass bottles; is that so?

500 A. Yes, sir.

Q. How do you account for this difference?

A. The chief difference is due to the improper sterilization of the glass container.

Q. Do you know that there is such a thing as a chlorinater used in sterilizing glass bottles?

A. Yes, sir.

Q. Do you know whether that part of the washing equipment is subject to being irregular and becoming out of order during the process of washing?

Mr. Schaefer: That is objected to.

The Master: I will let him answer.

A. Yes, it does.

The Master: Q. How do you reconcile that with your statement a little while ago that in your district up there you found some bottles that were absolutely sterile?

A. In that case your machinery is working in perfect fashion.

Mr. Gariepy: Q. Do you know how often the water used in the bottle washing machine is used, Doctor, under an ordinary run of washing bottles at a milk plant?

Mr. Schaefer: Objection.

The Master: Sustained.

Mr. Gariepy: Q. At districts where you per-

501 formed these tests—insert that in the question.

Mr. Schaefer: I object.

Mr. Gariepy: The Master just asked him a minute ago concerning these questions.

The Master: Yes, go ahead.

Q. In the district—in your district—that is the way you have described it before where you said that the

bottles were absolutely sterile. Answer the question with reference to that.

A. It is used many times. I don't know what—

Mr. Gariepy: Q. Would you say it is seven days or eight days or two weeks at a time, before it is changed, or what?

A. I think it is changed daily.

The Master: Q. In your district, that is?

A. Yes, sir.

Mr. Gariepy: If it is not changed daily, Doctor, what is the result with regard to the quality of the water used in the rinse?

Mr. Schaefer: That is objected to.

The Master: He may answer.

Mr. Schaefer: There has been no showing that the witness has ever conducted any tests that would indicate whether the condition of the water changes.

The Master: Q. Have you ever conducted any tests along that line?

502 A. Yes, sir.

Q. That is where the water is not changed daily?

A. Yes, sir.

The Master: All right, go ahead and answer it.

Mr. Gariepy: Q. What did that show, Doctor, where you conducted those tests where water was not changed daily in the bottle washing machine?

A. The bacterial count goes up.

Q. In the event the water was not changed for a week or ten days at a time, what would you expect to find with regard to the height or the amount of bacteria count?

The Master: Q. What did you find? Did you make any investigations or tests?

A. I made investigations and tests but I couldn't quote definitely.

Mr. Gariepy: Q. What is the best of your memory or your recollection on the subject now?

The Master: Q. Put it this way—the longer the water was unchanged, the more bacteria?

A. The higher the bacterial count, yes, sir.

Mr. Gariepy: Q. Did you ever have occasion, Doctor, to find the water in the bottle washing equipment clogged or unable to run by reason of sludge forming from failing to change the water?

A. Yes, sir.

503 Q. When did you have that experience, Doctor?

A. In connection with the milk control program of our district.

Q. How long ago was that?

A. It comes up repeatedly.

Q. Describe the nature of that sludge you found in the machine?

A. It is somewhat gelatinous.

Q. About how much with regard to a pint or a bushel basket of that did you find?

A. I should say in a container in which the water was allowed to gravitate out or empty out by gravity, about one-fourth of the container would become gelatinous at the bottom.

Q. Would you call that a condition that makes for sterility in the washing of bottles or not?

A. The absence of it.

Q. And accounting for a high bacteria count?

A. Yes, sir.

Q. In your statement on page 20 you use the phrase with regard to colonies per cubic centimeter of several thousands. About how many would you mean by that?

A. I would have to know the reference, definitely.

Q. (Mr. Gariepy hands the 1937 report to the witness.)

A. Well, I have actually obtained counts as high 504 as 2,900,000 per container.

Q. That is with reference to this phrase on page 20, where you state that:

"Bottles washed in this fashion are considered commercially sterile, but actually in bacteriological tests yield from a few hundred to several thousands of bacterial colonies per bottle."

A. Yes, sir.

Q. Doctor, is there any such thing in your experience and in the research field with regard to a common definition and meaning of the words "commercially sterile"?

A. Yes, there is a definition.

Q. What is that definition?

A. The accepted standard is one organism per cubic centimeter of volume of the container.

Q. Do you know what the standard set as being acceptable by the United States Public Health Service is?

A. It is that standard.

Q. One thousand?

A. Yes.

Q. From your research, Doctor, and from these tests as outlined in your report for 1938, have you an opinion with regard to the comparative merits of the glass bottle for distribution of milk, with the paper bottle made of virgin spruce pulp?

505 Mr. Schaefer: That is objected to, if the Court please.

The Master: Objection sustained.

Mr. Rall: If the Court please, he was asked about one test from which it was disclosed.

The Master: He is asking the question.

Mr. Rall: But, we are here together on this and it seems to me vital that they shouldn't be permitted to make from one isolated test a comparison favorable to the glass milk bottle and then over all of this witness' long experience we be prohibited from asking what all of his tests show. It seems to me it throws a great deal of light on whether or not the test about which they asked him was a true, fair representative test of this witness' entire experience.

The Master: I sustain the objection.

Mr. Gariepy: Q. What is your opinion, Doctor, with regard to the paper container from a health and sanitary standpoint, compared with the glass bottle from a health and sanitary standpoint, for use in the sale of milk?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. I believe, Doctor, that these tests described in your 1938 report concerning which I
506 have asked several questions, show that you made a careful and intensive study of bacteria in milk in glass and in paper bottles. Were these made under practical conditions?

A. Yes, sir.

Q. Were you satisfied with the degree of sterilization of glass bottles that you found in performing these tests?

A. No.

Q. Don't these tables and these tests that you performed show in about every case that you found an average of about half as many bacteria in the milk in the paper as you found in the milk in the glass bottles?

A. That is too high. It is 1 to 1.05 and 1 to 1.02.

Q. That is what your findings were?

A. I think I have that quoted correctly. I beg your pardon. One ratio was 1 to 1.08, and the other was 1 to 1.05.

The Master: You are now reading from what?

A. "Comparative bacterial counts of milk in paper bottles and in sterile glass bottles."

The Master: I say, what are you reading from?

A. The same report he has been talking about.

The Master: What page?

507 A. Page 46.

The Master: All right.

Mr. Gariepy: Q. Doctor, I also note that you use the phrase "Standard Milk Bottle", or "Standard Milk Container", referring to page 47 of your report under conclusions.

A. Yes.

Q. What do you mean by "Standard Milk Container"?

A. I was using the term there in an accepted sense, that is, that folks generally recognize a milk bottle; but, since that time, there have been some tests made that should alter the word "Standard".

Q. To such an extent—or to what extent?

A. Well, to the extent that there is no standard.

The Master: Q. Doesn't that depend on what you mean by "Standard"?

A. Yes. Meaning by a standard, a perfectly uniform object.

Q. Yes, I suppose if you call a standard, a bottle made of glass, that is round, and sort of tapers off towards the top, with an opening at the top, and a certain diameter at the bottom, that would be fairly standard, wouldn't it?

A. It is fairly standard—actualy not, though.

Mr. Gariepy: Q. With regard to a bottle about six
508 and one-half inches high and four and one-half inches wide, with a gable top, would you consider that as standard, if you found it used in two hundred cities and villages throughout the United States?

Mr. Schaefer: I object.

Mr. Gariepy: Let me finish—

Q. Made out of paper, and paraffined on the inside and paraffined on the outside?

Mr. Schaefer: I object.

Mr. Gariepy: What is the reason for the objection?

The Master: Let's not argue, here.

Q. So far as paper containers are concerned, would you say that the type of container just mentioned by Mr. Gariepy is standard?

A. I would.

Mr. Gariepy: Q. Do you know the extent of the use of that container, Doctor, in the various cities in the United States?

A. Well, I have a general idea, but not specific.

Q. What do you know, of your own general information—

Mr. Schaefer: That is objected to.

Mr. Gariepy: Q. —concerning its use in various cities?

Mr. Schaefer: That is objected to on the grounds previously raised, and now going into that question with
509 this witness.

The Master: I will let him answer and say if these paper containers are used in some cities of the United States.

A. It is used in many of them.

Mr. Gariepy: Q. Name those that you know, Doctor?

A. It is used in New York City; Baltimore; Philadelphia, the suburbs of Chicago, in California—Los Angeles.

Q. Doctor, do you use the paper container in your own home?

Mr. Schaefer: That is objected to.

A. No.

The Master: Objection sustained.

Q. By the way, when you mentioned New York City and these other cities, do you mean to say that they use only paper containers in those places?

A. No. They are accepted equally with glass.

Q. Well, are they used as generally as glass?

A. Do you mean on the basis of the proportion of the volume?

Q. Yes?

A. I am not in position to answer that.

The Master: Go ahead.

Mr. Gariepy: Q. What have you found, Doctor, in
510 your experience and experiments and research field on the glass milk bottle and on the paper milk bottle, that you offer as support for your conclusions on page 46, that the paper containers are superior to the glass milk bottle?

A. Well, it is a single service container, is one of its points of superiority.

Q. That is one?
A. Yes, sir.
Q. What are the other factors?
A. The fact that the bacteria count is often housed up in it, so that the bacteria count are comparable or sometimes superior if the sterilization of the glass container is not adequate.
Q. The fact that it is a single service container, how does that affect the public health angle, Doctor?
A. It absolutely breaks the transmission of communicable diseases through the agency of a glass bottle.
Q. Have you in your experience and experiments found occasions where diseases have been communicated by reason of the use of glass bottles?
A. I have not detected any, myself.
Q. Do you know of occasions and places where there has been such?
A. Yes.
Mr. Schaefer: That is objected to.
511 The Master: What is the question?
Mr. Gariepy: Read the question.
(Last two questions read by Reporter.)
The Master: Objection sustained.
Mr. Gariepy: Q. In your testimony with regard to the control area that you stated, Doctor, you said that you found perfectly sterile bottles. What was the percentage of perfectly sterile to the total per day of the bottles, that is with regard to one per cent or ten per cent?
Mr. Schaefer: That is objected to.
The Master: Let him answer.
Mr. Schaefer: If the Master please, I would like to argue that—that is the condition of glass bottles in this district in Pennsylvania is utterly immaterial here. Now, we are going into per cent of sterility of that district.
The Master: We let the other in as to sterility of glass bottles in his district. Now, then, that statement, unexplained, might perhaps mean they are all sterile, and he wants to find out what is the situation in his district. Now, whether his district necessarily governs is a different thing.
Mr. Gariepy: Q. Did you get my question, Doctor?
A. I think I have it.
512 Q. What percentage did you find to have sterility in your district? You said you found sterile bottles.
A. The percentage of sterility in quarts was 44*A*; in

pints 36.1. In those that are commercially sterile, of the quarts 22.2 per cent and of the pints 30.5 per cent, which we will indicate as being sterile; giving us 66.6 for each.

Q. What do you mean, Doctor, by commercially sterile as you use it?

A. That is an allowed bacteria count of one thousand for quarts and five hundred for pints.

Q. You know nothing about whether the soaker washer as described in exhibit 42 shown to you is used in the Chicago area or not, do you, in the washing of glass bottles?

A. I don't.

Q. Do you know the other types of glass milk bottle washers that are used?

A. In Chicago?

Q. Yes?

A. No, sir.

Q. Do you know anything about the counts with regard to bacteria counts required for the acceptibility of glass milk bottles in the Chicago area?

A. I don't.

Q. How long ago, Doctor, did you perform these 513 tests outlined in your report and article concerning which I have asked you several questions, labeled reprint from The Pennsylvania Association of Dairy Sanitarians, Fourteenth Annual Report, 1938? Are they recent studies?

A. That was done in 1937.

Q. All during that year?

A. Yes, sir.

Q. Did you perform other experiments at the Geneva laboratories with Dr. Sanborn and Dr. Breed?

A. Yes, sir.

Q. When were they performed?

A. Last summer, 1938.

Q. Was that on virgin spruce pulp paper board from the Cherry River Paper Company?

A. Some of it was.

Q. And have you the results of those experiments here?

A. Well, now, do you want the results of all experiments?

Q. That you performed on virgin spruce pulp paper board from the Cherry River Paper Company, in Geneva?

A. Disintegration tests, do you mean, and things of that sort?

Q. Yes.

A. The disintegration tests that I run reveal less
514 than one hundred bacteria per gram of board.

Q. What is that with regard to being acceptably sterile or not?

Mr. Schaefer: That is objected to, if the Court please.

Mr. Gariepy: I think he is able to give his conclusions.

The Master: I sustain the objection.

Mr. Gariepy: Q. How does that compare with the public health standard for glass bottles?

Mr. Schaefer: That is objected to.

The Master: Where?

Mr. Gariepy: Right there.

The Master: Where?

Mr. Gariepy: In Geneva where he performed them.

The Master: I will let him answer it.

A. There is no possible comparison.

Mr. Gariepy: Q. Why?

A. Because the organisms in the paper container are obviously involved in the fabric, whereas the organisms in a glass container are obviously on the inner surface.

Q. Did your test include the inner surface?

A. I have made no rinse tests.

Q. When you disintegrate the board, the inner surface, as well as the outer surface, was disintegrated, was it
515 not?

A. Yes, sir.

Q. You know nothing about the chip-board stock that is being used by Fieldcrest Dairies in this case for housing the milk containers?

A. I don't.

Q. The milk containers that they sell?

A. I don't.

Q. You have also some remarks concerning the melt adhesive as you refer to it on page 12 of your report. Did you perform certain experiments concerning bacteria count in that melt adhesive?

A. Yes, sir.

Q. As used on the bottom of the milk bottle?

A. Yes, sir.

Q. Paper bottle?

A. Yes, sir.

Q. Showing you table five on page 13, regarding cultural tests made on "Ribbons" of number 227 melt adhe-

sive, is that the result of your experiments on that melt adhesive?

A. Yes, sir.

Q. Do yor know whether that is the same adhesive that is used in the Pure-Pak container?

A. I don't.

Q. Where was this adhesive obtained from, if you know?

516 A. Well, my source was from the Dixie Vortex Company. Where they got it I don't know.

Q. Is that the same adhesive that is used on drinking cups?

A. No, sir.

Q. What do they use that on, in every day life, so far as commodities on which this same adhesive is found, if you know?

Mr. Schaefer: That is objected to.

The Master: Let him answer.

A. It is used in construction of their Milk Dixie, which is their milk container, paper container.

Mr. Gariepy: Q. Is there any other place where it is used or any other type of paper receptable that you know of?

A. So far as I know—not.

Q. Concluding, after the table on page 13, you make this statement on page 14:

"The evidence presented from these tests would seem to indicate that the melt adhesive compound is sterile as it is obtained from the factory."

Is that true?

A. It is true.

Mr. Gariepy: Mr. Rall has a few questions that he would like to ask the witness.

517 *Examination by Mr. Rall.*

Mr. Rall: The questions I ask are on behalf of Fieldcrest Dairies, and if this testimony is offered in the Ex-Cell-O case, I will make no objection in behalf of Ex-Cell-O Corporation in that case. I refer to all of the testimony of this witness.

Q. Have you ever found pathogenic bacteria on paper board manufactured at the Cherry River Paper Company?

A. No, sir.

Q. Did you ever find any pathogenic bacteria on paper board manufactured by any one that you have tested for use as milk containers?

A. No, sir.

Q. When you say that the bacteria which you did find on the six per cent of Cherry River board had no sanitary significance, what did you mean by that?

A. It couldn't be linked in any way with contamination that might be indicative of transmission of disease.

Q. What sort of bacteria were they that you found?

A. They were mostly spore forming aerobic organisms.

The Master: Q. What does that mean?

A. They are saprophytes, living—

Q. Living on what?

A. Living on organic material in general.

Q. Are they pathogenic?

A. No, sir.

518 Mr. Rall: Q. The test that you referred to in your answers to Mr. Schaefer's questions, you have described as older tests; is that true?

A. In that one case I did.

Q. When were those tests made?

A. 1933 and 1934, I believe it was.

Q. How many different kinds of paper containers did you use in that test?

A. Four different kinds.

Q. How many?

A. Four different kinds.

Q. In what way were the milk bottles that you used in that test sterilized?

A. By the chemical method described.

Q. How many additional tests have you made since the original test that you referred to in your answers to Mr. Schaefer's questions?

A. All that are involved in that subsequent report.

Q. Do you know whether or not the Pure-Pak Container manufactured out of Cherry River board are involved in your 1933 and 1934 tests?

A. It was not.

Q. What makes of containers were involved in those tests?

A. The Purity, the Seal Rite and the Seal Cone and the Mono Service.

519 Q. Which of those are fabricated at the factory and sent in pre-fabricated to the dairy for filling?

A. Purity and Seal Rite.

Q. The other two are sent in flat form and filled and also formed at the dairy?

A. The Seal Cone is fabricated from stock. The Mono Service is a nested container, as it is sent out from the converting plant.

Q. And differs from the Pure-Pak container which is sent in a flat form and is then formed and paraffined at the plant or at the mill before it is filled; is that true?

A. Yes, sir.

Q. Do the tests you have referred to in your answers to Mr. Schaefer's questions, made in 1933 and 1934, in your opinion as a bacteriologist, fairly reflect the mature opinion which you hold as to the relative merits of paper containers and glass containers from a bacteriological standpoint?

A. They do not.

Q. When you say that in general you are not satisfied with paper containers in the present state of development, will you tell the Master exactly what you mean by that statement?

A. I mean that they have not yet reached perfection.

520 Q. From your standpoint as a bacteriologist, do you believe that they are now in that state of freedom from bacteria that justifies their use for containing liquid milk and cream?

A. I do.

Q. You referred to the problem of coverage of paraffin in your answers to Mr. Schaefer's questions. As I understood you, you mean that if conditions under which the paraffin were applied were not uniform the paraffin would not be uniform; is that true?

A. Yes, sir.

Q. And the result of a lack of paraffining would be to permit moisture to be absorbed into the paper board that should have been covered; is that true?

A. Yes, sir.

Q. If the paper board is itself free from bacteria, there is no health problem presented in that absorption, is there?

A. No, sir.

Q. The tests that you made show an average of less than one bacteria per gram in 1938 in Cherry River board; is that true?

A. No. I said less than one hundred per gram.
Q. Less than one hundred per gram?
A. Yes, sir.
521 Q. Of the container board?
A. Yes, sir.
Q. Were any of those bacteria pathogenic?
A. They were not tested for it.
Q. They were not tested for it?
A. No, sir, that is, their gross appearance was not of pathogenic forms.
Q. Do you believe that there is any health hazard from the angle of application of paraffin that you referred to in your answer to Mr. Schaefer's question?
A. No, sir.
Mr. Rall: That is all.
The Master: Do you have very much more?
Mr. Schaefer: Yes, I would like to come back at 2:00 o'clock.
The Master: All right, 2:00 o'clock.

(Thereupon, the further hearing in the within cause was continued until 2:00 o'clock p. m. on the same day, June 26, 1939.)

522 (Caption—456)

Hearing resumed before Master Grossman at 2:00 o'clock, p. m. on June 26, 1939. The same counsel present.

JOHN W. RICE, resumed the witness stand and testified further as follows:

Examination by Mr. Schaefer.

The Master: Are you ready to go ahead?
Mr. Schaefer: Yes, sir.
The Master: All right.
Mr. Schaefer: Q. Doctor, you refer to two sets of studies of the bacterial content of milk in paper and in glass, one made in 1934 and the other in 1937?
A. Yes.
Q. Is that correct?
A. That's right.

Q. The study that you made in 1934 was a rather exhaustive study, was it not, and was so characterized by you?

523 A. That was the one that dealt with the four different types of containers.

Q. Yes?

A. Yes, sir.

Q. And other than those two series of parallel tests which you have described, have you made any other parallel tests to determine the bacterial content of milk in paper and glass?

A. Not on an extensive scale.

Q. Those are the two tests?

A. Those are the main studies, yes.

Q. Have you made any subsequent tests on the four types of containers involved in the 1934 test, to determine the relative bacterial content of milk in those containers and in glass?

A. No, sir.

Q. Then, so far as you are aware, and so far as those four containers are concerned, the result expressed in your paper published in 1934, to the effect that the grand totals and averages named would indicate that a properly washed and sterilized glass bottle is still the least hazardous in the contamination of milk through its container, is still correct?

A. So far as I stated is concerned.

Q. Your 1937 studies concerned only one type of

524 container?

A. Yes, sir.

Q. Is that correct?

A. That is right.

Q. And that was the Dixie Vortex Container?

A. That is right.

Q. Was that container being marketed at the time your studies commenced?

A. Not on a wholesale basis, that is it was a commercial set-up, experimental in character.

Q. Wasn't the container being used for the distribution of milk?

A. Yes, sir.

Q. At that time?

A. Yes, sir.

Q. It was?

A. One distribution center.

Q. What was that?

A. One distribution center.
Q. How did you come to make that test, Doctor?
A. I was asked by the company to check on their plant.
Q. Were you paid by the company?
A. Yes, sir.
Q. Now, I notice that in your analysis of the bacterial counts that you obtained from paper containers and from paper board, you made some effort to characterize the
525 odors of the bacterial colonies that you found?
A. Yes.
Q. Why did you do that?
A. It goes back to the original work on bottle cap contamination of milk, in which attempts were made to discover conditions of unfavorable fermentations in milk in a certain dairy, and all evidence that could be obtained was noted that might have a bearing upon the problem.
Q. Did you attempt to analyze these odors because of the possible future association with off-odors and off-tastes in milk put up in finished paper containers?
A. No, not at that time, because I never was confronted with the problem at that time.
Q. In your 1938 report there you made this statement: "Because of the possible future association with off-tastes and off-odors on milk put in the finished paper containers, an attempt was made to interpret the odor of the culture plates even though the descriptive terminology became somewhat picturesque at times."
A. That was the continuation of the work, that is,
526 the first association was with bottle caps and, of course, the second association was with reference to paper in connection with containers.
Q. Yes, and you were interested in those odors because of the possible future association with off-tastes and off-odors?
A. Yes.
Q. Is that correct?
A. Yes, sir.
Q. As you stated here?
A. Yes, sir. I don't think I understood the question the first time.
Q. Well, I might not have been as clear as I could have been with the question.
A. (no response)
Q. The result of your work with respect to comparative bacterial counts of milk in paper and in glass in 1934 show

that with respect to paper containers made from bleached paper there was an average count of 1.524, as contrasted with a count of 1 for glass; is that correct, Doctor?

A. Your reference is what page.

Q. Ten.

A. You are on the summarization?

Mr. Gariepy: What page is that, Mr. Schaefer?

527 Mr. Schaefer: That is page ten.

A. Yes, sir.

Q. And with respect to bottles made from unbleached stock paper, the paper container showed a bacterial count of 1.244, as contrasted with a count of 1 for milk in glass containers?

A. Yes, sir.

Q. Now, your work in 1937, reported in 1938, with the Dixie Vortex Container was divided really into two phases, was it not; the first phase being the work done with that container when a closure made of jobber's stock was used; and, second phase being when a closure made of the same material that was used in making the sides of the container was used?

A. That is not quite the situation.

Q. What is it, Doctor?

A. The first part of the statement is all right. The second part is from a different type of paper than is used in the first jobber's stock; but it was not Cherry River board that went into their closures.

Q. You made some finding with respect to closures used for those paper bottles when jobber's stock closures were used, did you not?

A. Yes, sir.

Q. Is that correct?

A. Yes, sir.

528 Q. And those tests showed certain results with respect to the odor of the culture plates?

A. Yes, sir.

Q. Is that correct?

A. Yes, sir.

Q. From what source would those odors have come?

A. They are associated with bacterial growth of one sort or another.

Q. They were the bacterial growth that you found in examining the closures?

A. Yes, sir.

Q. You found odors which you described as "stale,"

"fishy," "faint fishy," "faint acetamide fishy," "faint fishy," "pungent paraffine," "fecal," "fishy," "fishy," "wet dog" odor, "faint musty," "stale," "faint musty," "fishy" "stale," and "musty," "putrid-fecal," "musty" and "fishy," did you not, Doctor?

A. Yes, sir.

The Master: I am just wondering how that would sound, read back. Read it.

(Question and answer read by Reporter.)

Mr. Schaefer: Q. Did you find those odors, Doctor?

A. I did.

Q. You found those?

A. Yes, sir.

529 Q. You made that examination because you were concerned as to whether or not the odors associated with the bacteria in the paper container might be transmitted to the milk?

Mr. Gariepy: I object to Mr. Schaefer stating in the form of his question his conclusion rather than asking the Doctor why he did it.

"You made that statement. Why did you do it?" would be a better form of question.

The Master: The Doctor, with that notice, can correct the statement if he wants to.

Mr. Schaefer: Q. Can you answer that?

A. Well, of course, so far as the investigation is concerned, it was to find anything that might be considered to be detrimental to the product put up in paper.

The Master: Repeat that.

A. So far as the investigation is concerned, it was to find anything that might be considered to be detrimental to the product put up in paper.

Mr. Schaefer: Q. Now, in the published report of your work, Doctor, during 1937 on the Dixie Vortex Container, you reported in table number six in the bacterial counts

530 on paper milk bottles which were filled with sterile water and incubated for six hours at 37 degrees Centigrade, did you not, Doctor?

A. Yes, sir.

Q. How many samples did you use in that test?

A. Twenty-three.

Q. How many did you find sterile by that test?

A. Two.

Q. How many did you find with a count of less than one thousand colonies per bottle?

A. One.

Q. How many with a count of one thuosand per bottle?

A. Five.

Q. The other thirteen all had counts above one thousand per bottle?

A. Yes.

Q. Ranging up to, one, as high as twenty-six thousand colonies?

A. Yes, sir.

Q. Some of those colonies emitted odors?

A. Yes, sir.

Q. Will you describe the odors that were emitted, please?

A. One is described as "stale"; one as "faint putrid"; another as "putrid"; another as "putrid"; one as
531 "fishy"; one as "foul"; one as "stale musty" and one as "foul."

Q. Now, where did these bacteria come from that you found in those paper containers, Doctor?

A. Obviously, from the container itself.

Q. That is because they were filled with sterile water?

A. Yes, sir.

Q. Because they were filled with sterile water, which couldn't have added any bacteria?

A. Yes, sir.

Q. How do you account for the large variation running from sterility to twenty-six thousand colonies per bottle?

A. First and foremost, this, as I brought out this morning is not a standard test at all; it is a very rigorous test to prove the presence of any bacteria in a container that may be dislodged or detached from and partial paraffining or anything of that sort, and the great range—for the want of a more detailed study—would probably be due to the relative rate at which bacteria reproduce themselves in a nutrient or some nutrient medium, some reproduce very rapidly and others very slowly, and those that we would get that would go through two or three cultural generations would have a much higher count than those that would only go through one. As I explained this morning,
532 that is not a standard test at all.

Q. It is, however, Doctor, a test which reveals the bacteria which are present in the container which may be transmitted to the fluid which is put into the container?

A. Yes, sir.

Q. Is that right?

A. Yes, sir.

Q. And it is so designated to reveal that?
A. Yes, sir, definitely so.
Q. And the results did reveal it?
A. Yes, sir.
Q. If, instead of sterile water, you had in those containers milk, would the count be higher or lower?
A. Do you mean in comparison with what are listed?
Q. In comparison with what the counts are that are listed here?
A. Presumably higher.
Q. Bacteria normally multiply, don't they, Doctor?
A. In nutrient condition, yes.
Q. And milk is a nutrient material for the growth of bacteria?
A. Yes, sir.
Q. I call your attention, Doctor, to the container number W-181 of the three containers with respect to which you
533 testified, that showed an average of twenty-six colonies per plate and a count of twenty-six thousand colonies per bottle and those colonies you describe as large spreading granular colonies of bacteria and six mold colonies emitting a "stale" musty odor.
A. Yes.
Q. How do you know there were no pathogens present?
A. For one reason, the medium upon which these samples are plated was not designed to grow pathogenic bacteria, with the exception of study for cocci; none of those were present.
Q. You don't know whether or not there were pathogens present there or not?
A. On the basis of the nutrient quality of the medium, they were eliminated.
Q. Had you used a medium which would have been suitable for pathogens you might have found them?
A. Well, that would only be a conjecture, that is the only way I can approach it.
Q. The medium that you used was not designed to reveal the presence of pathogens?
A. No. That's right.
Q. Have you done any work with respect to the determination of the presence of pathogens?
534 A. None direct, no.
Q. In all of your paper container work?
A. None.
Q. You have done no such work?

A. None of it. By the way, there is an error at the top of that table six on page fifteen. It states the capacity of a bottle is 990 ounces. It should be the capacity of a bottle is 990 c.c. Not ounces. I just noticed that, so I call your attention to it.

Q. Now, with respect to the bottle designated as W-41, which had average bacterial colonies per plate of 10, and a total of 9,900 bacterial colonies per bottle, which you characterize as one mold colony and large granular spreading colonies of bacteria emitting a "stale" odor.

A. Yes.

Q. How do you account for the large number of colonies present in that container?

A. On the same basis as any other large count, as I explained awhile ago, the relative rate at which these bacteria would reproduce in this medium—water held for six hours at that temperature.

Q. Which, as I think you stated, is not a nutrient medium?

535 A. Well, there is enough impurity in the ordinary sterilized water to constitute a culture medium for bacteria. In other words, it was not distilled water.

Q. But, on the other hand, it was not as nutrient a medium as milk, for example, would be?

A. No.

Q. In table number seven which is reported by you as part of the report of your work done in 1937, with respect to the Dixie Vortex Container, you reported in the summarization to table seven and the relative bacterial counts of the first bottles in the nest, the last bottles in the next and intermediate bottles, and your report showed that the average number of bottles found sterile of all bottles was 37.5; the percentage of first bottles found sterile was 16.6; the percentage of last bottles found sterile was 50 per cent and the percentage of intermediate bottles found sterile was 39.3 per cent.

A. Yes.

Q. How do you account for the difference in the percentage of sterility between the first bottles which had a very relatively low percentage of sterility, and the average and the intermediate and last bottles?

536 A. I made no attempt to account for that.

Q. Have you any opinion?

A. So far as I know I have made no comment on it.

Q. Have you any opinion as to what might account for that condition?

A. The only explanation that might be given is that we find in the rinse tests that the counts are not uniform; sometimes they are high; sometimes they are low; no attributable reason for it.

Q. Does there seem to be relation here between the first bottle—between the position of the bottle and the sterility of the bottle?

A. The first bottle should not have a sterility any higher than the intermediate. The fact of the matter is the intermediates are the most protected in the stack so far as stacking or nesting is concerned.

Q. But the first bottle has a lower percent of sterility?

A. Yes, sir.

Q. And you are completely unable to account for that?

A. I made no comment, which meant, of course, I had not comment to make. It is just one of those things—one of those things you can not explain at the time. May I make a comment there?

537 Q. Surely.

A. That is, examining this series, you are confining yourself to the "F" series there.

Q. Yes, sir.

A. In which the closure to the container was temporarily a fiber closure. The "P" series would eliminate anything that might come from the closure itself, it would be a sterile petrie dish, and there you see you have again a comparable result, although it is somewhat higher.

Q. That is again even where the sterile petrie dish was used as a closure, the first bottle was found to be less sterile than the other bottles?

A. Yes.

Q. Now, I call your attention to table number 18.

A. Yes.

Q. Reported in your 1938 report.

A. 18?

Q. Yes, which is a table of comparative bacterial counts of milk in paper bottles and in commercially prepared glass bottles.

A. Yes.

Q. I notice that you show that your quart bottle control had a bacterial count of 6500 per bottle.

A. Yes.

538 Q. What do you mean by your quart bottle control, Doctor?

A. It was a bottle that had been prepared for the reception of milk in the same way as all of the others that had been used in the parallel sampling.

Q. That is, a test was made of that control bottle in order to determine the bacterial count of the bottles which you were using in the parallel test?

A. Yes. Or, to put it another way—it was to determine how near sterility we had in our commercially prepared glass bottles.

Q. And these tests which are described in table number eighteen and concerning which you testified this morning, were tests in which the glass bottles had a bacterial content of 6500 colonies per bottle; is that correct?

A. No. I would say the control bottle had that, but there is no way of knowing what the others had, or were. Presumably they were not sterile.

Q. Presumably they had approximately the same count?

A. That all depends upon their previous treatment and the degree with which they were prepared for this test—that is the degree of cleanliness and sterilization.

Q. You know the degree of cleanliness and sterili-
539 zation, do you not?

Mr. Gariepy: I object to the statement of fact, Master, rather than an interrogation of the witness. Let the witness do the testifying.

The Master: The witness is able to take care of himself.

Mr. Schaefer: Will you read the question?

(Pending question read by Reporter.)

A. I will say in that connection that all of the bottles received the same treatment so far as cleansing and sterilization are concerned.

Q. As did the control bottle?

A. As did the control bottle.

Q. In your district do you permit the use of glass bottles with a bacterial count of 6500 per bottle?

A. Yes. Not if we know it, but there is no way of checking in our control area; there is no way of checking frequently enough to know whether the counts are held below that or above it.

Q. I see. Of course, your comparative results would be effected by the bacterial content of the glass bottles, would they not?

A. Yes, sir.

Q. So that if you used a glass bottle with a considerably lower content, your bacterial colonies which you found
540 in the milk would be considerably lower?

A. Yes, sir.

Q. And your ratio of average counts stated in the summary at the bottom of table eighteen, as 1.42 for glass as to 1 for paper depended also on the condition of the glass bottles used in the test?

A. That's right.

Q. Now, you made this statement in 1938, Doctor:

"There is no doubt that if the paper manufacturer, the paper bottle manufacturer and the control laboratory work critically and harmoniously work together, there will eventually be evolved in the not too distant future a paper milk container of whatever type or design that will be able to stand the most vigorous inspections of municipal and state public health officials, and which will win a place for itself as a standard of high inherent sanitary quality and the sound public health principle involved in the single-service container."

Has that goal yet been attained, Doctor?

A. No, sir.

Q. What work are you doing at Geneva now, Doctor?

A. Largely penetration tests.

541 Q. What do you mean by that?

A. The amount of moisture or dye, aqueous dye that is taken up by paper containers.

Q. That is, those tests are designed to determine whether containers are absorbent or not absorbent?

A. Yes, sir.

Q. Are they absorbent or not absorbent?

A. They are relatively absorbent.

Q. In relation to what?

A. In relation to glass.

Q. With the exception of the cap, the glass milk bottle is not absorbent, is it?

A. It is not.

Mr. Schaefer: That is all.

Mr. Gariepy: I have a few questions, Master.

Examination by Mr. Gariepy.

Q. Dr. Rice, you answered Mr. Schaefer's question with a quotation from the last ten lines of your article, a writing of 1938, with respect to the fact that you did not think that the paper bottle had attained a place to be accepted as a standard milk bottle. You also made this statement on page 46, just previous to that:

542 "When considered from the public health angle, these paper milk containers are superior to the glass milk bottle, since there is no chance to spread infectious disease organisms from household to household by a single service container."

Is that still your opinion?

A. Yes, sir.

Q. Is there a chance to spread disease organisms from household to household by the use of the glass bottle?

A. Yes, sir.

Q. With regard to table number seven, concerning which you were interrogated a few minutes ago, and the paper bottle as a receptable for milk, on page 19 of your report you state as follows:

"In spite of the rather poor showing of these paper containers in the preceding sterility test it seemed reasonable to place them in test in parallel with the ordinary glass milk bottle. In these tests both types of containers would be filled with milk under commercial conditions and studies as to effect upon bacterial counts when handled under

543 conditions similar to those obtaining in the milk trade."

Is that still your conclusion?

A. Yes, sir.

Mr. Schaefer: Q. Was that a conclusion at all, Doctor?

A. Well, it was an assumption.

Mr. Gariepy: Q. Is that still your opinion, Doctor?

A. I would attack the problem in the same way, again.

Q. With regard to the paper board, you answered the question that any bacteria that was shown up in test on number seven or test number eighteen would be shown and, in your opinion, come from the paper container. Is that with regard to your conclusion on page 36, quoting:

"These tests indicated that the inner or milk contact surfaces were 93.9 per cent sterile."

A. I think that is dealing with another set of tests.

Q. That is on page 36, after you have outlined these tests on table 12, regarding original closures shaped at the home factory, the bacterial growth—all these various odors that you testified about, with regard to being putrid and fishy and so on; when you get through with that you
544 come down there and say these words I just gave you, page 36.

Mr. Schaefer: Following what table?

Mr. Gariepy: Table 13 is the last table.

Mr. Schaefer: Give me the table.

Mr. Gariepy: Table 13.

Mr. Schaefer: All right.

Mr. Gariepy: Q. After table 13, Doctor, there is one paragraph, and you state:

"These tests indicated that the inner or milk contact of surfaces were 93.9 per cent sterile."

A. That is this new set of closures drawn at the home factory, which was our attempt to eliminate the difficulties that we were encountering in the first set of determinations that were made in which we had these unfavorable conditions.

Q. These show 93.9 per cent sterility?

A. In the second test.

Q. In the second group of tests you got?

A. In other words, the plant eliminated the material from which the first tests were done, and with new stock used for the second set of tests, after these tests were devised.

Q. You just answered the question, that you were
545 performing more penetration tests and tests as to whether the paper was absorbent or not absorbent, and you said relatively in relation to the glass bottle they were absorbent. Is there any health hazard involved there?

A. No.

Q. You have on table number 8 on page 21 a list of your findings with regard to averages of bacterial colonies per cubic centimeter in the milk bottle in glass and in paper; you found that the average in the paper bottles was 70.6, and in the glass bottle, 74.6?

A. Yes, sir.

Q. And that is this Dixie Vortex Bottle?

A. Yes, sir.

Q. Is that virgin spruce pulp?

A. Yes, sir.

Q. Do you know whether it comes from the Cherry River Mill or not?

A. The side stock does, yes.

Q. The side stock does?

A. Yes, sir.

Q. Doctor, might not a bacteria form an odor in a culture or media such as was used in your tests and not form it in the milk?

546 A. Yes.

Q. Is an odor formation on the culture media an inclination that the same odor would be formed in the milk?

A. No.

Q. Were these odors determined in the milk?

A. No.

Q. Is it your opinion that the odors that are determined, as you determined them, would always be of any significance whatsoever?

A. Yes, they do have significance.

Q. What significance?

A. For example, the odor of the colon baccillus is quite distinctive, and when that is found in connection with standard plate counts of milk, it is the next test to go on and identify the presence of the colon baccillus by distinctive tests.

Q. Did you do that?

A. We do that in our routine work.

Q. Did you ever do that?

A. Yes, sir.

Q. What did you find in doing that?

A. We found the colon baccillus present.

Q. When was that?

A. That was during the routine work of the milk 547 control program in our milk control area.

Q. What year was that, Doctor?

A. That has been running on since 1912.

Q. I see.

A. And it is in progress now.

Q. You stated that you made a test and that the test that you made was exhaustive concerning four types of containers.

A Yes.

Q. Can you name those four types?

A. They are the Purity, the Seal Rite, the Seal Cone and the Mono Service.

Q. And since 1934 you have not made any tests on these four types with regard to comparison with the glass?

A. Not these kind of tests, no.

Q. What distribution center was this Dixie Vortex Container being used in at the time that you made these tests?

A. From Hazelton, Pennsylvania.

Q. With regard to the tests shown on table number 2, cultural tests on samples taken from board from which tops are formed—pages 9, 10 and 11, I notice in those three tables on those three tests, under "Odor of plates," you have zero throughout.

548 A. Yes.

Q. Is that right?

A. That's right.

Q. And with regard to bacterial growth, substantially, you have sterility throughout?

A. That's right.

Q. And you conclude, after making that test, with regard to odor and bacterial growth, as follows:

"It will be noted that in these series of tests involving 70 units taken from a total 514 sheets of stock board only four samples showed any growth of bacteria or molds. This would indicate a sterility factor of approximately 94 per cent by this method of testing."

A. Right.

Q. Is that an acceptable condition of sterility?

A. I would say so.

Q. Whose board was that, Doctor?

A. This is—I can't say. That is one of the boards I could not identify this morning for you.

Q. Do you know whether or not it is the Cherry River Paper Company board?

A. I don't know.

Q. Is it Dixie Vortex Container?

549 A. It was Dixie Vortex Container.

Q. With regard to table 18, Doctor, entitled "Comparative bacterial counts of milk in paper bottles and in commercially prepared glass bottles," do you consider that a fair test with regard to the bacterial counts in each container under normal use in the trade?

A. Yes.

Q. In that you found that the ratio counts in the glass bottle was 1.42, in the paper 1, only, on your summarization?

A. Yes, but I am wondering whether your first question applies.

Q. Well, this is the heading that you have there, "Comparative bacterial counts of milk in paper bottles and in commercially prepared glass bottles." That is your heading?

A. Yes, but I understood you to imply that the paper bottles were under equally commercial conditions.

Q. You conclude at the end of table number 18, as follows:

"It will be noted in the summarization that the bacterial counts obtained from milk in paper containers *was lower* in every way than corresponding counts made on milk in glass bottles."

550 That is your conclusion and that is your opinion from your tests outlined in those tables, is it?

A. That is right.

Q. With regard to the technique employed on page 42, is it not a fact that this milk was placed in quart sized glass bottles by special draining spout which was substituted of a paper container under the valve of the filler tank.

A. Yes.

Q. Would that not increase the chance of sterility with regard to the glass bottle by filling it like that?

A. I don't believe it would.

Q. Do you think it would have the same effect when you fill it like this, as if it were filled in the machine, going in the rotating process?

A. No, it would not.

Q. Would it be higher or lower?

A. I am afraid it would be higher. That is the reason we studied another method in the second set-up.

Q. Is that a fair test, by means of substituting this new method or special draining spout?

A. It was the only test we could devise at the time.

551 Q. Have you ever seen the machine in operation which fills the Pure-Pak Containers?

A. I have not.

Q. Have you ever seen the machine in operation which fills the ordinary glass milk bottle with milk?

A. Yes.

Q. Is it or not a fact that a man stands near that

machine while the bottles are rotating on a sort of cylinder and the milk is poured in as the bottle meets its opening?

A. Yes, sir.

Q. And have you ever had occasion to make a test of the contents of a bottle of milk filled under those conditions, taken immediately from the filler?

A. Yes.

Q. With an attendant standing by?

A. Yes, sir.

Q. With regard to table number 19 in your 1938 report, entitled "Comparative bacterial counts of milk in paper bottles and in sterile glass bottles," you comment as follows:

"In spite of this handicap it will be noted that the milk put up in paper containers presents a ratio of average counts very closely comparable to the average bac-
552 terial counts of milk put up in laboratory sterilized glass bottles."

A. Yes.

Q. What laboratory methods concerning those sterilized glass bottles were employed?

A. They were capped with heavy craft paper and sterilized by steam pressure, 15 pounds of steam, for 15 minutes.

Q. Not taken from the dairy in the regular course of events in the filling of milk?

A. No. They were prepared in my laboratory.

Q. You make some comment, Doctor, concerning the sealing effect of paraffin, I notice in your report, especially with regard to edges of the paper board. Have you performed any additional experiments with regard to the effect of paraffin on this board, other than that you have described here?

A. That comment was made in connection with the board used in manufacturing of bottle caps, as I recall it. It may have been a reference in one of these later reports, but up to this time it was done.

Q. This is under table one of bacterial findings for closures for paper milk bottles—jobbers stock, and reads as follows:

553 "It is evident also that the paraffining, or waxing quite successfully sealed the outer and inner surfaces of the closures where the fabric was not sharply bent or cut."

A. Yes.

Q. What do you mean by "quite successfully sealed the outer and inner surfaces"?

A. As I just mentioned, this dates back to the work on bottle caps in which it was found that the waxing had the tendency to prohibit the development of bacteria from the surfaces which were waxed and were not subsequently modified by some other pressure such as scoring or penetration of wire and things of that sort. This is a statement that is drawn from that experience.

Q. What did you find with regard to bacteria in these caps that are commonly used by the glass bottle?

A. Well, the milk surface is the surface which gives you the least development of bacteria; the cut edges the most.

Q. Is that sealed with wax or paraffin or what?

A. It is wax or paraffin.

Q. Do you know anything about the quality of paraffin?

A. It is run through a paraffin bath on an endless
554 belt at a temperature of about 170 degrees.

Q. Is there any reason why, if the paper board is run through a paraffin bath at 170 degrees, it would not have the same effect with regard to sealing?

A. Presumably it has the same effect.

Q. The edges of these caps are sealed where the bacteria, if any, will come to?

A. Yes, sir.

Q. What did you find concerning edges which the paraffin did not seal in?

A. Wherever contamination emerges from the base of the cap, it is practically throughout the entire circumference.

Q. That would increase the bacteria count in the milk, or the content?

A. Yes, sir.

Q. What did you find with regard to permitting milk to be emitted through the edges of the cap in the bottle?

A. Do I understand that question?

Q. Yes, the edges of the cap, around, that touches the glass, did you find in your experiments as to whether or not that unsealed portion of the edges permitted milk
555 to be emitted and go through?

A. Yes.

Q. How much milk did you find that was permitted to

go through by reason of imperfect paraffining of the edges of the cap of the bottle?

A. I don't know—I am afraid that is not the situation. The cap edge of the cap fits against the cap flange or the side of the cap flange of your bottle.

Q. That is the glass part?

A. That is the glass bottle.

Q. That is right.

A. And as the column of milk expands it shoves up around that, especially when it increases in temperature or anything of that sort.

Q. Is it not possible for the expansion in cold weather, so that the top is completely lifted off and sitting up on the cream line?

A. Very much so.

Q. And the entire cream line is exposed to whatever bacteria may be in the air and come in contact with it?

A. At least some of it.

Q. That is a common occurrence in cold weather, in the winter time, when bottles are left outdoors, when they are in touch with the weather?

556 A. Yes, sir.

The Master: Is that all?

Mr. Gariepy: That is all.

The Master: Are there any questions?

Mr. Rall: Yes.

Examination by Mr. Rall.

Q. These tests at 37 degrees Centigrade are substantially body temperature, 98 degrees Fahrenheit, aren't they?

A. That is right.

Q. Milk commercially is preserved at much lower temperatures than that, isn't it?

A. Yes, sir.

Q. The effect of those lower temperatures is to prevent the multiplication of bacteria at any such rate as takes place in a 98 degree Fahrenheit temperature?

A. That is right.

Q. The tests you made in 1937 and 1938 on closures from jobber stock were not made on board from the Cherry River Paper Company, were they?

A. They were not.

Q. And were not made on Pure-Pak Containers or the board used in Pure-Pak Containers?

557 A. No.

Q. The tests on the Dixie Vortex Containers which Mr. Schaefer referred to, in which two were sterile, one was less than one thousand, five had one thousand, and running as high as twenty-six thousand colonies, were not Pure-Pak Containers, were they?

A. No.

Q. Wherever in your testimony you referred to containers being contained in nests, they were not Pure-Pak Containers, were they?

A. No.

Q. Wherever you referred to closures in your testimony, the containers you were referring to were not Pure-Pak Containers, were they?

A. No.

Mr. Rall: That is all.

Mr. Gariepy: Q. Doctor, have you done any work on the amount of absorption in paper cups?

A. No, I haven't.

Mr. Gariepy: That is all.

558 *Examination by Mr. Schaefer.*

Q. The paper in the ordinary paper milk bottle cap is how thick, if you know, Doctor?

A. How thick?

Q. Yes. Is it less than thirty pound?

A. It is not less than thirty pound. I think it is about thirty pound.

Q. How thick is the paper in the container board?

A. That varies. In the Pure-Pak Container, it is twenty pound.

Q. That is the paper used in the bottle caps is thicker?

A. Yes, sir.

Q. It takes a longer time to dry thicker paper in the paper manufacturing process, does it not?

A. Yes.

Q. That is the paper remains exposed to the heat of the dryers, thicker paper remains exposed to the heat of the dryers a longer time than thinner paper?

A. That is what made me hesitate, because, where I have experience in paper mills, it is limited. The paper

of different gauge was run over the same number of drying rolls, at the same rate.

Q. At the same speed?

A. Yes.

559 Mr. Gariepy: The witness is shaking his head, meaning "Yes".

The Witness: How?

Mr. Schaefer: Q. The answer is "Yes"?

A. Yes.

Q. Where was that, Doctor?

A. That was at Oswego Falls Corporation.

Q. They were making both?

A. Yes, both cap board and container board, because they are converter for both.

Q. From the same source of raw material?

A. Yes, sir.

Q. And with the same machinery?

A. Yes, sir.

Q. And that was where you found the E-coli in the water at the calendar stacks?

A. That was the first run there.

Q. You have found odors connected with bacteria in milk bottle caps in milk, haven't you?

A. That is, you mean the odors in the milk after the cap is removed?

Q. Yes, sir.

A. I have never run a series of tests of that sort.

Q. You have never run a test to determine whether those odors are transmitted or not?

560 A. Whether the milk odors are transmitted?

Q. Whether the odors from the cap are transmitted to the milk?

A. No, sir.

Q. Nor have you run such tests with respect to container boards?

A. No, sir.

Q. As to their possible transmission to milk?

A. Not on milk itself. All of these samples were made or run with agar medium, that is the board was plunged right in the agar.

Q. With respect to table number 18, you testified that was a fair test. As to the relative bacterial content of milk in paper containers, under normal conditions—under normal conditions in the trade. In your experience, is a

milk bottle with a bacterial count of 6500 a normal condition in the trade?

A. I would say yes, a normal colony.

Q. That is also the normal condition of the trade in your locality that you permit raw milk to be sold for human consumption when that milk has a bacterial count of 1,660,000?

A. No, sir.

Q. That is the milk that you used in this test.

561 A. This was a plant set-up outside of our jurisdiction, it was at Hazelton, Pennsylvania, and our control area does not involve Hazelton.

Q. In your control area you do permit the sale of milk in bottles having a count of 6500?

A. I explained, it was very difficult for us to control the bottle count situation, and that is a significant thing, and you will find it in all small communities. The fact of the matter is, I think our community is exceptional in that it actually investigates it all.

Q. You mean in small communities that is not investigated?

A. I know that to be the case.

The Master: Q. What is that, that is not investigated?

A. The bacterial content of the cleansed milk bottle.

Q. Glass bottle?

A. Glass bottle.

Mr. Schaefer: Q. Table 18, Doctor, your samples twelve, thirteen, fourteen, fifteen and sixteen were apparently all taken at the same time, to-wit: 11:35 a. m., and yet they show differences in bacterial count ranging from twenty-three thousand to forty-three thousand, five hundred.

562 A. Yes.

Q. How do you account for that?

A. There is no way of accounting for it any more than there is a way of accounting for irregularity in bacterial rinse tests on paper container—either paper or glass.

Q. Would you permit milk to be sold in your district which had a count of forty-three thousand, five hundred?

A. Yes. Our ordinance calls for fifty thousand. There is a maximum.

Q. You testified, if I understood you correctly, that your method of filling glass bottles—the test reported as described in table number 18, reacted unfavorably to glass?

A. Yes, sir.

Mr. Schaefer: That is all.

Mr. Gariepy: I have just a few questions.

Examination by Mr. Gariepy.

Q. Doctor, you further stated in your report under table 18 that you were not satisfied with the degree of sterilization achieved in the glass bottle, as indicated by the bacterial count of the control bottle, and that 563 amounted to about 6500?

A. Yes, sir.

Q. Further in your summarization on table 18, Mr. Schaefer just asked you about, the highest bacterial count that you found in the glass bottle was 62000, as compared with 43500 in the paper?

A. Yes, sir.

Q. And your lowest bacterial count that you found in the glass bottle was 30000, as compared with 23000 in the paper?

A. That is right.

Q. Concerning this length of time that the board is in the drying process, the longer it is in the drying process, the less chance for bacteria to live?

A. That is right.

Q. That is due to the heat and the pressure that will dry them out and give them nothing to live on?

A. It is largely due to heat.

Q. And the further fact that any water that is left there for them to feed on will be taken out?

A. Yes, sir.

Mr. Gariepy: That is all.

Mr. Schaefer: I have one more question.

564 *Examination by Mr. Schaefer.*

Q. What did you mean by this statement, Doctor, which precedes your table 18:

"We were not satisfied with the degree of sterilization that was achieved in the glass bottles as was indicated by the bacterial count of the control bottle"?

A. I meant we were not satisfied with the sterility factor or the comparison factor, upon which we were going to base our counts in paper, later.

Mr. Schaefer: I see. That is all, Master.

Mr. Gariepy: I will ask to have this document marked as plaintiff's exhibit 43 for identification.

The Master: It may be so marked.

(The single sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 43 for identification.")

Mr. Gariepy: I have a few questions, Master

Examination by Mr. Gariepy.

Q. Doctor, concerning these tests, one there was nestled containers?

A. Do you mean nesting?

Q. I mean nestling, as we call it in the navy, as
565 we nestle a boat.

A. I beg your pardon.

Q. I show you plaintiff's exhibit 43 for identification, which purports to be descriptive data of the paper milk bottles, Seal Rite Company, in cone shape fashion. Are those the type of containers that you used in performing these tests as shown in your report in 1938?

A. No, not in 1938.

Q. 1937, I mean.

A. 1937—these were not the containers.

Q. Were they that style and shape with regard to the nesting?

A. These can not be nested.

Q. Those are the ones at the bottom that you can take out?

A. This is the one you can take out.

Q. And you can put your fingers through the top?

A. That is the way they do it.

Q. The cap is put on after the milk is poured in?

A. It can be capped in an ordinary bottle machine.

Q. Do you know whether or not the same material is used in that style container, the Seal Rite, that is used in the container of the cap?

A. Not the hood cap, but the disc cap.

566 Q. It is the same material?

A. Yes, it is the same material.

Q. Have you performed tests on those caps?

A. Yes, sir.

Q. Seal Rite caps?

A. Yes, sir.

Q. Isn't that the common accepted cap that is used today on the glass bottle, Seal Rite?

A. It is one of the largest cap manufacturing concerns in the country.

Q. Is that made out of virgin spruce pulp?

A. That is made out of ground spruce wood pulp.

The Master: Q. What do you mean by "nesting"?

A. One container will slip into the other for practically its whole distance or for just a short lip out.

Q. What is the purpose of that?

A. Well, you can close your smaller end of the container and have that as a practical closure in the factory or in the fabrication plant, and they are put up in nests of fifty containers, one inserted into the others and it makes a roll about so long (indicating). They are encased in white waxed paper, fashioned in such a way that you can take the paper off either after it has been set down on its housing on the filler, the bottle filled—and
567 in that way there is only one possible container that can be exposed on the outside conditions, and that is the last one in the next, and the rest are protected by the adjoining fellows.

Mr. Gariepy: Q. In these tests you took out the ones that were exposed on the outside and disregarded those?

A. No. Those were included in this set-up.

The Master: Q. You are connected with Bucknell University?

A. Yes, sir.

Q. Have you done any work for these paper manufacturers in the past?

A. I did control work for the Foster Paper Company and for the Seal Rite Company, or the Fulton Company after these first tests as reported here were revealed to them. They asked for the conditions that they could control in their plant in the way of chlorination of water supply and things of that sort and then asked for a re-check for comparison.

Q. How do you happen to be working on these paper problems?

A. Well, became interested in 1926 when a dairy came to me and asked me to find the source of a sweet curd and ropy milk in their plant.

568 Q. Where were you at that time?

A. I was at the college, and the plant survey failed to reveal those conditions and I got a hunch at that time

"I wonder what the bottle cap does to a bottle of milk", and that started the whole thing going.

Q. Is there any endowment at your college for the carrying on of this kind of work?

A. No. It comes out of the general budget for the department.

Q. There was some testimony here that at some colleges, either the dairies or the paper companies created a fund for the carrying on of experiments along those lines. I was wondering whether the same condition existed at your college?

A. We have no fixed fund of that sort.

Q. You say you have, however, done some work for this dairy company that you mentioned?

A. Yes, sir.

Q. Any others?

A. That is the only one.

Q. Any paper companies?

A. Only those checks for plants I just mentioned, that was the Foster Paper Company and the Seal Rite Company.

Mr. Schaefer: Q. And the Vortex?

569 A. That was the other container set-up.

The Master: Is there anything further?

Mr. Gariepy: Yes. While the Master has made that inquiry, I think it is pertinent:

Q. Doctor, I will ask whether you have ever been requested to do any work for the Cherry River Paper Company?

A. Not directly.

Q. Have you ever been to the mills and examined the technique of the manufacture of paper board?

A. That was Dr. Sanborn's function.

Q. You had nothing to do with it?

A. I had something to do with the summer surveys.

Q. This Fulton Company is the Seal Rite Corporation, Inc., of New York?

A. Yes, sir.

Q. As shown in plaintiff's exhibit 43 for identification?

A. Yes, sir.

Mr. Gariepy: I offer this article in evidence which has been marked plaintiff's exhibit 43 for identification.

The Master: It may be received. There are no objections, are there?

Mr. Schaefer: I object.

570 Mr. Gariepy: What is your objection to it?

The Master: Oh, let it go in. It may be received.

(Said single sheet document so offered and received in evidence was marked "PLAINTIFF'S EXHIBIT NO. 43", and is attached hereto and made a part hereof.)

The Master: Q. Are you associated with Dr. Sanborn?

A. I am a part time investigator in his department, invited there by Dr. Breed.

Q. What is his department?

A. The Division of Bacteriology at the New York State Agricultural Experiment Station at Geneva.

Q. You mean you go over there and conduct experiments at his laboratory?

A. I am there two months.

Q. Two months each year?

A. I am there two months each summer time.

Q. Who is Dr. Breed?

A. Dr. Robert S. Breed is Chairman of the Division of Bacteriology at the Geneva Experiment Station.

Q. You are going back there this summer to do some work?

A. I am there now—supposed to be there now. I left there yesterday.

The Master: Are there any further questions for
571 this witness?

Mr. Schaefer: This document that has just been introduced, I would like to ask the Master to read that.

Mr. Gariepy. The Master is not bound by the advertising. I only asked its admission in reference to the company. It is the Seal Rite Company.

Mr. Schaefer: The witness has said for whom he did the work.

Mr. Gariepy: The Master isn't bound by their advertising. It is for identification purposes.

The Master: Let me look at this a minute.

(Discussion off the record.)

The Master: Upon further consideration, it being stated that the only purpose of the introduction of the exhibit, plaintiff's exhibit 43, would be to identify the Seal Rite Company, Inc. as the Fulton Company, referred to by the witness, I believe that the exhibit should be excluded because the witness has already stated that the Seal Rite Company is the Fulton Company.

Are there any further questions for this witness?

Mr. Gariepy: Yes.

Q. The cone shaped container that you referred to
572 as nesting, is made of that shape there?
A. It is not that set-up.
Q. It is not that set-up, but it is that shape, is it not?
A. Yes, it is that shape.
Mr. Schaefer: The Seal Rite Container is not a nested container.
The Witness: No, sir.
Mr. Gariepy: That is all.
The Master: Are there any further questions now for the witness?
(No response.)
The Master: That is all, Doctor.
(Witness excused.)
(Discussion off the record.)
(Thereupon, the further hearing in the within cause was continued until 10:00 o'clock, a. m. on the 5th day of July, 1939.)

573 • • (Caption) • •

Wednesday, July 5, 1939,
10 o'clock A. M.

Met pursuant to adjournment.

Present:

Frederick A. Gariepy, Owen Rall, of counsel, on behalf of plaintiff;

Barnet Hodes, Corporation Counsel, City of Chicago, by Walter V. Schaefer and Charles P. Horan, Assistants Corporation Counsel, on behalf of defendants.

574 The Master: You may proceed.
Mr. Gariepy: Mrs. Koller, will you step forward, please?

MARGARET M. KOLLER, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please.
A. Margaret M. Koller.
Q. What is your address?

A. 307 South Illinois avenue, Villa Park, Illinois.
Q. What is your business or occupation?
A. Director of Koller-Koller, Inc., Laboratory.
Q. Have you any degrees with regard to any science.
A. A Bachelor degree and a Master of Science.
Q. From what schools did you obtain such degrees?
A. DePaul University.
Q. What does Koller-Koller Laboratory, Inc., do at Villa Park, Illinois?
A. We act as a health department laboratory for a number of the west suburban towns and also do some work for dairies.
575 Q. How long have you so acted and how long have you done such work?
A. We have been in business for about ten years and done city work for the last eight.
Q. Will you name the cities or municipalities for which you do laboratory work and describe the kind of work you do for them?
A. We are retained on a yearly basis by Maywood, Glen Ellyn, and Villa Park, to do all of their milk and water inspection and also city laboratory work and then there are about twenty of the other outlying suburban towns that we do work for whenever they ask for it, but not on a continual basis.
Q. Will you name those outlying towns for whom you do laboratory work?
A. DeKalb, Naperville, Wheaton, Elmwood Park, Cicero, Hinsdale, River Grove. That is about all of those Western Towns now.
Q. Do you do laboratory work in the way of bacterial inspection for dairies?
A. Yes.
Q. Will you name the dairies for whom you do such work?
A. At some time or another I believe we have done work for practically all dairies in that locality.
Q. Name them.
A. Willow Farms at LaGrange, Rabe at Elmhurst, Cloverleaf Dairy at Addison.
576 Q. Did you do work for the Geneva Dairy?
A. We did. They are out of business now.
Q. Otter-Pohl?
A. Yes.

Q. Maywood Farms?
A. Yes. There are about twelve dairies in DeKalb.
Q. Chicago Guernsey Farm?
A. Yes. Then we check all the Chicago trucks that come into the western suburbs, take samples from them.
Q. Samples of milk?
A. Yes, milk and cream, chocolate milk.
The Master: Off the record.
(Discussion off the record.)
The Master: Q. When you talked about Chicago trucks coming into the suburbs did you mean trucks that came from Chicago or trucks that were on their way to Chicago?
A. Trucks that came from Chicago to the suburbs.
Q. Is milk delivered from Chicago dairies to the suburbs?
A. Yes, it is.
The Master: All right, now, Mr. Gariepy, put your next question.
Mr. Gariepy: Q. How often have you done that, Mrs. Koller?
A. Whenever the health department orders it. Probably an average of once a month.
577 The Master: Q. What health department?
A. Sometimes Maywood health department say they want samples checked over on everything coming into town, and other times other towns want things checked up.
The Master: All right.
Mr. Gariepy: Q. Have you a license under the statute as a milk and cream tester?
A. Yes.
Q. Have you that license with you?
A. Yes. (Handing documents to Mr. Gariepy.)
Mr. Gariepy: Counsel, I show you a license. Can it be agreed that she is licensed under Section 20(a) of the Illinois Dairy and Food Law to test and sample milk, test, grade and sample milk and cream?
Mr. Schaefer: To test, grade and sample cream and to test and sample milk.
Mr. Gariepy: Yes.
Mr. Schaefer: Yes, that can be agreed.
Mr. Gariepy: Q. How many years have you been so licensed by the State of Illinois, Mrs. Koller?
A. That paper there is the first license, the one you have folded up in front of you.

Q. Since 1930, February 5th?

A. Yes. That has been in force continuously since
578 that time. It has been renewed.

Q. Have you been actively following this pursuit with regard to testing milk and cream?

A. Yes.

Q. Since 1930?

A. Yes.

Q. Have you had occasion during the last year, 1938 and 1939, to become acquainted with the Pure-Pak container?

A. Yes.

Q. Have you had occasion to become acquainted with any other paper containers used for the packaging and distribution of milk?

A. Yes.

Q. When did you first become acquainted with such containers?

A. Oh, I think about May or June last year, when the application was filed to deliver milk in paper containers in some of the western suburbs.

Q. What did you do in connection with the inquiry concerning the fitness or unfitness of such paper containers?

A. I asked for from three to six months to go into the thing and read up on it and find out how far they had progressed with paper containers and make a little experimental work of my own, in order to give an answer to the health officers.

579 Q. What tests did you perform, Mrs. Koller, from May, 1938, to date, with regard to the fitness or unfitness of the Pure-Pak container as a receptacle for the distribution of milk and packaging of the same?

A. In our own laboratory we were not set up to make the tests on the raw board, that is, the bacterial counts and tearing this paper to pieces, as they do in the making of those counts on the raw material, so we had to confine most of our own testing to sterile rinses; getting these containers and have them stand around for a month and testing them when they come in and then testing them at the end of the month, and so on, to see how they held up under storage conditions; and the other information we had to rely on from people who had had more experience than we did and had done more work on it.

Mr. Schaefer: I move to strike the last portion of that answer, which is not responsive to the question.

The Master: I will let it stand.

Mr. Gariepy: Q. Have you had occasion to perform tests with regard to the bacteria count in milk sold in the suburbs from dairies that are selling milk in the city of
580 Chicago, both in the glass and in the paper containers, especially the Pure-Pak container.

A. Yes.

Mr. Schaefer: May I have that question read, please?

(Mr. Gariepy's last question was read by the reporter as above reported.)

Mr. Gariepy: Q. Mrs. Koller, before I follow on with that question, will you tell me the result of the rinse tests that you performed on the paper container from May, 1938, to date.

A. Well, in no case did we find a count higher than we would have found in glass bottles.

Mr. Schaefer: I move to strike that.

The Master: What is that?

Mr. Schaefer: I move that that be stricken.

The Master: I will sustain the objection. The answer may be stricken.

Mr. Gariepy: Q. Mr. Koller, have you a list of the results of your experiments on the glass bottle as compared with the paper bottle, on milk, since May, 1938, delivered from these dairies?

A. I have records on it, yes.

Q. And have you those records here?

A. I haven't them here. I think you have them.

The Master: Q. What do you mean by the rinse test?

581 A. We take an empty paper bottle and we rinse it with sterile water. We use 10 cc. of sterile water and rinse the interior of the bottle and plate the rinse water.

Q. What?

A. Make a bacteria count on that rinse water to see how many organisms will be washed off inside of the bottle.

Q. Where did you get the container? Did you pick it up yourself?

A. No, I had it sent to me from companies that wanted to sell those containers. We had some shipped to us from New Jersey, the American Can container, and then we had Mr. Dean send in some of these Pure-Pak containers.

Q. That is, the containers all—

A. Sealed up.
Q. (Continuing.) —sealed up?
A. With no milk in them.
Q. With no milk?
A. Yes. I went down to the dairy and selected the ones that were shipped in. I took them right out of the storage room from the American Can and the Chicago dairy.
Q. If you took them out of the dairies, they were not in a store room, were they?
A. Some of them were. Some I took right from
582 the store room, just under the regular manufacturing conditions, just the same as they would get them.
Q. Let us see. Usually the containers are not all made up, are they?
A. The American Can container is.
Q. All made up?
A. All made up.
Q. And sealed?
A. And sealed.
Q. How can they get milk into it, if they get it sealed?
A. A vacuum pulls open the paper top and then that is filled and it is resealed.
Q. What do you do with the Pure-Pak container; is that all made up?
A. We had those sent in to us all made up nd waxed, but no milk. It had to go through the machine and sealed and no milk put in.
Q. Then you opened up the lip?
A. We opened it after we received it.
Q. What did you open up? The lip?
A. Yes.
Q. The pouring lip?
A. Yes.
Q. And then you put in the water?
A. Yes.
Mr. Gariepy: Q. Calling your attention to about the month of December, 1938, did you have occasion to perform comparative tests on milk sold in glass bottles
583 and in paper bottles by the Borden-Wieland Company?
A. Yes.
Q. I show you what purports to be a statement of your report for December 2, 1938. Was that prepared by you?
A. This is November, 1938, on here.

Q. It is dated at the top?

A. Yes, that is the date the report went out. Yes, this is one of our reports.

Q. Did you perform those tests yourself, Mrs. Koller?

A. Yes.

Q. At your laboratory?

A. Yes.

Q. And where did you obtain the receptacles, first the glass, and then the paper?

A. I took these at the Forest Park, Illinois, plant.

The Master: Q. Of whom?

A. Borden-Wieland.

Q. Take those? How many did you have?

A. I had four bottles. One was a quart bottle of milk and it was dated to be sold before noon Wednesday, and that was in a paper bottle. I took another paper bottle of milk to be sold before noon, and then I took two empty bottles, two empty containers, and I took those right out of the stock room.

Mr. Gariepy: Q. What did you find in performing
584 the test on each?

Mr. Schaefer: Just a moment. I would like to see the exhibit before you testify to it.

(The witness handed the document referred to to Mr. Schaefer.)

Mr. Schaefer: If the Master please, this exhibit has no reference to the original question which was asked, which was as to comparative counts on milk in glass and paper, which was Mr. Gariepy's original question.

The Master: He is starting out to ask her the count on paper. I don't know. I suppose he is going to follow up with the count on glass bottles.

Mr. Schaefer: There has been no testimony that a comparative count on glass has been run.

The Master: Q. Did you conduct any tests on glass milk bottles?

A. Yes.

Mr. Schaefer: Q. Comparative tests?

A. I did comparative tests.

The Master: Let us see now. He is giving part of it at a time now.

Mr. Gariepy: Q. Mrs. Koller, with regard to this sheet dated December 2, 1938, and the tabulation hereon concerning these tests and the counts, you made those
585 yourself?

A. Yes.

Q. Will you tell what you found in performing those experiments on the paper bottle, and the date?

A. The empty milk bottles you want first?

Q. Yes.

A. Both of these empty containers gave sterile plates.

Q. Which means what?

The Master: Q. Both of these empty containers did what?

A. Gave us a sterile plate. That is when we plated this rinse water.

Q. And you mean by that what?

A. There was no bacterial growth. We did not get a growth on any of the plates on the rinse and the milk from these paper containers filled at this time showed a 2,000 count, which is very low.

Mr. Gariepy: Q. Did you tell the dairy from which you obtained those?

A. Yes.

Mr. Schaefer: Q. Both of those two quarts of milk had a 2,000 count?

A. Yes.

Q. Each of them had a 2,000 count?

586 A. Yes.

Mr. Gariepy: Q. What is the standard count allowed, Mrs. Koller, per quart?

A. Our local ordinance names 30,000 or less; 30,000 is the maximum on a pasteurized bottle.

The Master: Q. Thirty thousand what?

A. Bacteria per cc., according to the standard method.

Mr. Gariepy: Speak louder, Mrs. Koller, so Mr. Schaefer can hear you.

The Master: Q. Any particular kind of bacteria?

A. Well, we generally check, as you can see here, for haemolytic contamination and for a presumptive colon contamination. The other is not identified ordinarily, unless we get a very high count and we try to find out the cause.

Q. Do you test for tubercular bacilli?

A. Not in the pasteurized bottle, no; unless the count is excessive we do not do that or unless we find it is not properly pasteurized. If it is not a properly pasteurized bottle, it should be destroyed.

Mr. Gariepy: Q. Did you in the month of December,

1938, on behalf of the town of Cicero, perform certain experiments on empty paper containers submitted to you for examination?

587 A. I would like to keep some of these things off the record, Mr. Gariepy, if we are going to go into the counts.

Q. I didn't hear you.

A. I say I would like to have some of these names off the record, if you are going to go into private accounts. I don't know whether these towns would like to have these all broadcast. This is for our own home town, that one happens to be, and I know I can do that on this one.

The Master: Q. Which one?

A. That one happens to be made for Villa Park.

Mr. Gariepy: Q. Will you look at this report of December 9, 1938, concerning which I just asked you a question, and tell me whether that was prepared by you on Bowman paper containers?

A. Yes, it was.

Q. And at your laboratory?

A. Yes.

Q. And what test did you perform to secure the results therein tabulated?

A. The sterile rinse.

Q. How many days did you take and how many tests did you perform?

A. The Cicero inspector brought these in.

The Master: Q. What is that?

588 A. I say this inspector brought these in, the inspector of this town brought these in, and I worked on them just as he brought them in.

Mr. Gariepy: Q. And it showed what?

A. Five bacteria on one sample and sterile on the other.

The Master: Q. Those are empty containers?

A. Yes, your Honor.

Mr. Gariepy: Q. What type of a container is that, with regard to being Pure-Pak or not?

A. No, this was the American Can container.

Mr. Schaefer: If I may interrupt, just to have it all in one place in the record, I would like to ask a question.

Q. What was the Villa Park container?

A. That was American Can, too.

The Master: Q. You just took two containers; you don't know where they came from, except they were brought in by the inspector?

A. The inspector brought them in, yes.

Mr. Gariepy: Q. Mrs. Koller, in the month of February, 1939, did you make tests on certain samples of milk from the Bowman Dairy Company in West Chicago, Illinois?

A. I don't remember.

589 Q. Will you look at this sheet dated February 23, 1939, with regard to that question?

A. Yes, I did.

Q. And where did you obtain the bottles or the containers on which you performed those tests?

A. I got one from an Atlantic & Pacific store at 210 Main street.

The Master: Q. What city?

A. In West Chicago, store No. 1442, at 12:15 noon time, and then I took a glass bottle on the same day from Bowman's truck No. 1665, bought it from a driver by the name of H. Beauchamp at 12:45, a half hour later.

Mr. Gariepy: Q. What tests did you perform and what did you find?

A. We made a—

Mr. Schaefer: I don't object to what you did perform. I will object to what you did find.

The Witness: Would you like to have this, Mr. Schaefer? (Handing document to counsel.)

The Master: Q. What tests did you perform? First tell us that.

A. We made a routine examination on the milk in both containers.

Q. When you say "we," who is "we"?

590 A. Well, in the laboratory, I made them myself.

Q. You did it yourself?

A. Yes.

Q. Did anybody assist you?

A. We generally have someone there to do the sterilizing.

Q. You tested the milk in each of these containers?

A. Yes.

Q. For bacilli and what is it—haemolytic—

A. Just a routine test that we run generally.

Q. And colon bacilli?

A. Yes.

Mr. Gariepy: Q. What results did you find as a result of those tests, Mrs. Koller?

Mr. Schaefer: That is objected to.

The Master: What is the ground of the objection?

Mr. Schaefer: The main ground of the objection is that the dairy in question here is not and has not been shown to be a dairy which is licensed to pasteurize milk for sale in the city of Chicago. With conditions in the dairies in the suburbs we are not here concerned. Their conditions may be good, they may be bad, but whatever they are makes no differerence in the record here in this case. Here is the dairy out in West Chicago.

The Witness: No, this is Bowman Dairy.

Mr. Schaefer: This is a Bowman Dairy in West Chicago.

591 The Witness: No, they are delivering there. They have no dairy in West Chicago.

The Master: What?

The Witness: They deliver at West Chicago, but they have no dairy in West Chicago. The trucks go out to the suburbs.

The Master: Where do they come from?

The Witness: They come from the Forest Park plant, right there on the border line.

The Master: Is that the same Bowman Dairy Company that delivers in Chicago?

The Witness: Yes. Of course, they have different plants.

Mr. Schaefer: Do you know of your own knowledge whether or not the Forest Park Bowman plant delivers in the city of Chicago?

The Witness: No, I don't know.

The Master: I will let her answer.

Mr. Gariepy: Q. Tell your results, Mrs. Koller, please.

A. A quart of milk in the paper bottle—

Mr. Schaefer: Now, there is further ground of objection, if I may interrupt, please. There is no showing that these—

I take it, these purport to be comparative tests. Two
592 containers were glass, Mrs. Koller, and one was paper?

The Witness: Yes.

The Master: What is that?

Mr. Schaefer: Two were glass and one was paper.

The Witness: That is right.

Mr. Schaefer: They purport to be comparative tests. There is no showing that the milk was obtained at the same time under the same conditions at all. That is, we have not here a comparison at all.

The Master: Q. Whose milk was this that you got from the A & P?

A. Bowman Dairy.

Q. Both of them Bowman Dairy?

A. Yes. You see the store handles the paper container and you have to get the bottle off the truck.

Q. Did you obtain the milk on the same day?

A. The same day, a half hour apart. One was obtained at 12:15 and the other at 12:45, in the same town.

Q. And both the paper and glass bottle containers had marks on them to be sold before noon Wednesday?

A. That is right.

The Master: I will let her answer.

The Witness: That is as close as you can get it.

593 Mr. Schaefer: I move to strike that, if the Master please.

Mr. Gariepy: I didn't hear it, whatever it was.

The Master: What?

Mr. Schaefer: I suggest that volunteered remark be stricken.

The Master: Yes, that may be stricken.

Mr. Gariepy: Well, I didn't hear it.

The Master: Q. That is, they were both purchased in the same city?

A. Yes.

Q. One in an A & P store?

A. Yes.

A. That is the paper container?

A. Yes, sir.

Q. The two glass containers were purchased from a truck in the same city?

A. Yes.

Q. And all three containers had marks on them that they were to be sold before noon Wednesday?

A. That is right.

Q. And they were all Bowman milk?

A. All Bowman milk. The paper bottle showed a 1,000 count and the glass bottle—

Q. Now, wait a minute. The contents of the paper bottle?

A. Yes.

594 Q. That is the milk?

A. Yes.

Q. Showed a 1,000 count?

A. Yes, and the glass bottle, contents of the glass bottle, 9,000.

Q. Nine thousand?

A. Yes.

Q. Both glass bottles?

A. Well, the cream, of course, you can't compare the cream count with the milk.

Q. I see. Just the milk?

A. Just the milk, yes.

Mr. Gariepy: Q. Is that all that you found in those tests, Mrs. Koller?

A. Yes.

The Master: Q. Did you conduct any tests at any time not shown in these particular reports which showed that the milk in the paper container contained more bacteria than the milk in the glass bottle container?

A. Well, you see, with the Dean set-up, they have no glass bottles. I mean, we cannot get a comparison between paper and glass there. But on these ones we were able to get it. We have not found the count to be excessive in any paper container.

Q. In the Dean?

A. Yes.

Q. Did you ever find in a Dean paper container milk containing a bacteria count of 9,000?

A. Oh, yes, we have had from Dean in paper 9,000,

595 but we have no comparative check on that in glass bottles, because they don't bottle anything in glass.

Q. Would you say that in this particular instance the 1,000 count in the paper bottle and the 9,000 count in the glass bottle indicated that there was something other than the bacteria in the milk itself that caused the difference?

A. Not necessarily, no. One bottle was off the truck and the temperature may not have been as good as it was in the store icebox. Both bottles may have been just exactly the same to begin with. We just did this as a matter of comparison, to find out for our own records whether or not there was any difference.

Mr. Gariepy: Q. Did you have occasion during the

month of October, 1938, to perform certain tests on a glass bottle, of milk, for the town of Cicero?

A. Do we have to have all of this in the record, Mr. Gariepy?

Q. Well, I think we ought to go that far, anyway. What is the answer, yes or no?

A. Yes.

Q. Was that at your laboratory?

A. Yes.

Q. Who brought the milk or the sample in to you for the performance of this test?

596 A. The city inspector.

Q. Of the city of Cicero?

A. Yes.

Q. And without regard to revealing the name of the dairy from which this sample was obtained, will you tell the Master what your test and examination showed as to the contents of said quart bottle of milk, in the glass bottle?

Mr. Schaefer: Just a minute. May I see that, please?

The Master: Yes. Let Mr. Schaefer look at it.

(The witness here handed a document to Mr. Schaefer.)

The Master: I notice the sheets at which you have been looking are the originals.

The Witness: I have copies of my own to complete the file in the laboratory.

The Master: These are all copies?

The Witness: These are all copies of our carbon copies. We have some of the other carbons here, where we did not have time to get them all done.

Mr. Gariepy: Q. They were made at the same time the originals were made, in the same machine?

A. Yes.

Mr. Schaefer: Now, if the Master please, here is a dairy that I am certain does not sell in the city of Chicago.

597 Here is a count in a one-quart glass bottle of milk which is above the maximum permitted generally by ordinances of municipalities in this vicinity and I think generally throughout the country. Now, I am going to bring out the name of this dairy. I see no reason for this examination in giving other dairies black eyes. This test has no possible bearing upon any of the issues in this case. A one-quart glass bottle of milk in the city of Cicero has a count beyond the permissible maximum in the city of Chicago. That dairy is not under our inspection. What possi-

ble value that could be in determining the issue here I am at a loss to see.

Mr. Gariepy: My answer to that is that this milk is bottled in your glass bottle and the occasion for the contamination and so on is the same in the town of Cicero in this dairy as it is in any dairy in the city of Chicago where you permit the milk to be bottled in glass. The same occasion for contamination that exists at this dairy for bottles of milk under glass is just as possible in the city of Chicago today as in this instance.

Mr. Schaefer: Let me ask the witness a question.

Q. Do you know what the source of 50,000 count 598 on this bottle was?

A. I have a pretty good idea. Sediment in the bottle.

Mr. Schaefer: If the Master please, my objection still stands.

The Master: Q. What would you say was the source?

Mr. Schaefer: She said sediment in the bottle.

The Master: Sediment in the bottle?

Mr. Schaefer: Yes.

The Master: Q. Sediment from the milk?

A. Well, I don't like to divulge the name of any dairy here, because it is sometimes unavoidable, I presume.

Q. You would know where this material came from, would you?

A. I feel someone was very careless at the plant.

Mr. Schaefer: It is not under out inspection.

Mr. Gariepy: I will withdraw that question and put another one.

Q. Mrs. Koller, did you have occasion, in the month of January, 1939, to sample the adhesive or paste from the Chemung Dairy of the plaintiff milk plant?

A. Yes.

Q. I show you a report with regard to January, 1939. Did you prepare that report and make that test thereon?

A. Yes, I did.

599 Mr. Gariepy: Q. Where did you obtain the paste, or adhesive?

A. I took it from an unopened drum of paste out at the stock room in the plant, to see whether or not the paste was coming in in good shape.

Q. What did your examination of that paste at your laboratory reveal under date of January 11, 1939?

A. It showed that the paste as received was all right.

Q. What do you mean by "all right"? That doesn't mean anything?

A. We didn't get a growth on a plate.

Q. It was sterile, then?

A. It was sterile.

Q. It was negative with regard to a growth being present?

A. Yes.

The Master: Q. Paste for what?

A. A paste that they paste up the seam on the bottle. There is one seam in the bottle that is pasted.

Mr. Gariepy: Q. I show you plaintiff's exhibit 2. Will you indicate to the Master where that paste came from which was used in the bottle that you performed this test on on January 11, 1939?

A. You see, they paste the bottom up, here (indicating).

600 The Master: Q. You didn't get the paste off of the bottom or the sides, did you?

A. No. I took it out of the stock room as they received it in the plant.

Q. That is what it was used for?

A. Yes, sir.

Q. You didn't take it off of the container?

A. Not off of here, no.

Mr. Gariepy: Q. Would you indicate to the Master?

A. That is the paste that is used for this seam (indicating on plaintiff's exhibit 2).

The Master: Q. The paste that simply closes up this container?

A. Yes.

Mr. Gariepy: Q. What did you do in performing the test on the adhesive on January 11, 1939? Describe to the Master how you performed it?

A. We weighed out a gram of paste in a sterile beater and washed it with sterile water and made 100 c. c. dilution of it in sterile water and then plated one c. c. count of that.

Q. Calling your attention to February 20, 1939, did you perform certain experiments with regard to the plaintiff's milk in the town of Elmwood Park, as sold in the Pure-Pak Container?

601 A. I don't know.

Q. Will you explain to the Master where you obtained the milk under date of February 20, 1939?

A. In the National Tea Company located at 7546 Diversey Avenue, at three o'clock in the afternoon.

Q. What test did you perform?

A. The official plate count at that time was three thousand.

The Master: Q. What?

A. This was a bottle of Dean's milk.

Q. What did you perform the test on—the milk?

A. The milk.

Mr. Gariepy: Q. What was the number of bacteria count in the quart?

A. Three thousand.

Q. That milk was obtained in the same container as plaintiff's exhibit 2, here?

A. One like that, yes.

Q. On March 21, 1939, for and on behalf of the Village of Glyn Ellen, did you have occasion to perform certain tests on milk in plaintiff's containers?

A. I don't remember.

Q. On March 21, 1939?

A. Yes, we purchased samples from the National Tea Company, 536 Crescent Avenue.

602 Q. What time?

A. At 11:45 o'clock, a. m.

Q. Milk to be sold when?

A. Before noon, Wednesday.

Q. What did you do with the milk you obtained in that sample?

A. Ran the routine official plate count, and on the quart bottle got a count of one thousand; and the quart of chocolate drink, a count of one thousand; on a half pint of 22 per cent cream, two thousand; on a half pint of whipping cream, 32 per cent, eight thousand.

Q. How do you account for the eight thousand in the half pint of Grade A whipping cream?

A. We allow a higher bacterial content in cream. In separating, the bacteria goes in with the cream, more of the bacteria goes in with the cream than the milk.

Q. How much is allowed and still to be sterile?

A. Sixty thousand. It is double the milk.

The Master: Q. This doesn't show what dairy it was, does it? This is Dean's?

A. Yes.

Q. From Glen Ellyn?

A. Yes, sir.

603 Mr. Gariepy: Q. With regard to the B-coli present, did you find any?

A. No.

Q. As late as May 23, 1939 did you have occasion to make further checks on the plaintiff's milk sold in the Pure-Pak Container for the town of Glen Ellyn?

A. I don't remember.

Q. Where did you obtain that sample, and when?

A. We got this from Tauber's Delicatessen Store.

The Master: Is that Tauber's?

A. Yes.

Mr. Gariepy: Q. At what time?

A. 2:35 p. m. on May 23, 1939. Quart of milk had one thousand count; the one-half pint of 22 per cent cream had a count of two thousand; the one-half pint of 32 per cent cream had a count of four thousand.

The Master: Q. Was that all in paper bottles?

A. All in paper.

Mr. Gariepy: Q. The B-coli present was what?

A. Negative.

Q. Mrs. Koller, there has been some testimony here by you and by others with regard to the amount of bacteria permitted present in a bottle of milk, and in the bottle without milk. I will ask you this question; do you know how much bacteria is present in the human body, the ordi-

604 nary human body?

Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: Q. Have you in any of the tests that you have run on the milk in the Pure-Pak Container from May, 1938 up until this date found bacteria contained in the quart bottle of milk in the Pure-Pak Container in excess of six thousand?

A. I don't remember, but I doubt it. If we find high ones we always send them a letter on it, and I don't recall sending any letter.

Q. Are you acquainted with the health officials and the health authorities in the western suburbs from Oak Park west to West Chicago, Illinois?

A. Yes.

Q. Did you have occasion to meet with them last month in the City of Chicago, with regard to the matter of the use

of the Pure-Pak Container and the American Can Company Container in said sub- bs?

Mr. Schaefer: That is objected to as immaterial.

The Master: I will let her answer, yes or no.

A. We had our regular meeting at that time.

Mr. Gariepy: Q. Who was at that regular meeting?

Mr. Schaefer: I was just trying to save time.

The Master: What is the materiality of this?

605 Mr. Gariepy: The materiality is to show that the health officials from the villages west from Oak Park have gone on record as prohibiting the sale of milk in glass bottles, and allowing it to be sold only in paper bottles, going into home where contagion is present, the same as in Reading, Pennsylvania.

The Master: Is there any controversy about that?

Mr. Schaefer: There isn't any controversy about it. I don't know whether it is a fact or not.

The Master: You can cross examine her on it.

Mr. Schaefer: On the other hand, if it is not a fact, we can require broader proof of the fact.

Mr. Gariepy: You certainly can.

Mr. Schaefer: Just let me finish. I am willing to agree that the municipalities you enumerate, that those municipalities require—if you will—I think what you want is "prefer" or "advise" the use of paper containers in cases where milk is being delivered to homes afflicted by communicable disease.

Mr. Gariepy: Rather than accept your qualifications, I would rather have the witness tell whether they require them or whether they "advised" them. She was present at the meeting.

The Master: Ask the question.

Mr. Gariepy: You objected a moment ago.

606 Q. Will you tell what action was taken by the officials of the health bodies of the villages west from Oak Park to West Chicago, Illinois? First where was the meeting held, at the Steuben Club?

A. The Swedish Club.

Q. Name those who were present?

A. Dr. Miller of Oak Park, Dr. Weinberg of Maywood, Dr. Perkins of West Chicago, I believe Dr. Watson from Glen Ellyn was there, Dr. Fuller of Riverside. There were about twelve at this particular meeting.

Q. What action was taken at that meeting by these

health officials with regard to the use of the Pure-Pak and the American Can Containers in such suburbs where there was a communicable disease in the homes or in the factory?

Mr. Schaefer: I object to it.

The Master: Objection sustained.

Mr. Gariepy: I offer to prove by this witness, if allowed to answer the questions, that these officials went on record as prohibiting milk in the glass bottles.

A. No, they didn't—

Mr. Gariepy: You don't answer until the Master says you should do so.

The Master: There is no way of proving official actions other than by the meeting of the boards of health of
607 the different villages.

Mr. Gariepy: Q. Were they an unincorporated association?

A. Yes, sir.

Q. Were minutes kept of that meeting?

A. Yes, sir.

Q. Who kept the minutes of the meeting?

A. Dr. Weinberg.

Q. Of what town?

A. Maywood.

The Master: I don't know whether that is material. The action of the board of health of the particular municipality is not the action of some unincorporated group or a group of health officials.

Mr. Schaefer: It may be that the officials of the boards of health did not have the power, as a matter of law, to take such action.

The Master: Not the municipal authorities—just some representatives getting together in a meeting.

Mr. Gariepy: If the officials got together, and the board of health ratified their action, that is their action and it stands of record; Mr. Schaefer can not impeach it, nor can you or I; it is official.

The Master: Let's go ahead. I don't think it is material.

608 Mr. Gariepy: I want to make my offer of proof and it will be up to the Master to rule on it.

The Master: Go ahead.

Mr. Gariepy: Q. Mrs. Koller, have you in any of the experiments you have run from May, 1938 to the present,

had any occasion to encounter or find any such substance as saffranin in the milk in the Pure-Pak Container or the American Can Container, on which you performed certain experiments, which you related this morning—that is the paper board or Pure-Pak Container used by the plaintiff, Fieldcrest Dairies, here?

A. (Not answered.)

The Master: You did not conduct any experiments to find out what was in the board.

The Witness: No, I did not.

Mr. Gariepy: Q. Did you, in examining any of the contents of the many Pure-Pak Containers, from May up to the present time, have any occasion to detect any saffranin in said milk?

A. No, there is nothing to lead me to believe there was any there.

Q. Even in the glass bottle, did you have any occasion in the glass bottle to find saffranin?

A. No.

609 Q. Did you ever hear of saffranin being found in Grade A milk?

A. No, I didn't.

Q. Do you know a dairy known as the "Chicago Guernsey Farms"?

A. Yes, sir.

Q. Do you know whether they sell milk in the City of Chicago, under permit?

A. I believe they sell certified milk.

Q. What is certified milk? Explain it for the Master, will you?

A. It is raw milk, produced under excellent sanitary conditions, and the finished bottle must have a count of ten thousand or less.

Q. Do you know of any other dairies other than the Chicago Guernsey Farms that sell such milk in the City of Chicago?

A. The Brook Hill Farms put out a certified milk.

The Master: Q. What is the difference between certified and pasteurized?

A. Certified milk is not pasteurized; it is raw milk and it comes from especially inspected cows; it has to be done according to rules and regulations of the American Medical Association.

Mr. Gariepy: I didn't hear the last.

610 A. It has to be done according to the rules and regulations of the American Medical Association.

The Master: Q. Is the bacterial count of certified milk higher than that of pasteurized milk?

A. No. It shouldn't be over ten thousand, and we permit as much as thirty thousand in the pasteurized bottle.

Q. How do you account for the higher bacterial count in the pasteurized milk?

A. We permit milk of two hundred thousand count to be used in the pasteurized bottle and the pasteurization removes a certain percent of that bacteria, but not all. In order for the finished bottle to have the thirty thousand count, or less, milk that comes in has to have two hundred thousand or less, that is, according to our Grade A Ordinance.

Q. Certified milk and pasteurized milk—the difference is that pasteurized milk is put through a pasteurization process, and certified milk is subject to rigid inspection as to sanitation and so on?

A. Yes.

Q. Would you say that pasteurized milk has a higher bacterial count, as a general rule, than certified milk?

A. As a general rule, no. We generally find
611 a good bottle of pasteurized milk with a ten thousand or less in a count.

Q. Without going into figures, I just want a comparison as to pasteurized milk having less bacterial count than certified milk.

A. It may, it doesn't always. It is variable.

The Master: Go ahead.

Mr. Gariepy: Q. Did you have occasion to check the milk in the year 1938 sold from Chicago Guernsey Farms in Chicago?

A. I could not divulge that information.

Q. Did you have occasion, yes or no?

A. Yes.

Q. Did you find the count high or low, or, rather, what was the count?

Mr. Schaefer: That is objected to.

A. I don't remember.

Mr. Gariepy: Q. Have you ever had occasion to visit the New York Experimental Station at Geneva?

A. Yes, sir.

Q. When was that?

A. December, 1938.

Q. Did you have occasion to take any work there, or to perform any tests there—either one?

A. I went up there for a conference with Dr. Breed.

612 Q. Concerning what?

A. Paper bottles.

Q. Was that when you were asked to make an investigation for and on behalf of these western suburbs last spring, in May?

A. It was shortly after that, yes, and we wanted to put in paper testing equipment in our own laboratory and I wanted to see what type of equipment was being used in laboratories doing that work.

Q. You saw the equipment there?

A. Yes.

Q. Did you have occasion to go to the Fulton Paper Company with regard to the making of caps on paper bottles?

A. Which bottles?

Q. Caps on glass bottles that are used?

A. Yes.

Q. Do you know what type of material these caps are made out of?

A. They are made out of virgin wood. They are made out of virgin wood at this particular plant.

The Master: Off the record. Can't you agree on that?

(Discussion off the record.)

Mr. Gariepy: It is stipulated by and between the

613 attorneys for the plaintiff and the defendants, that the City of Chicago at the present time permits the sale of milk of various dairies in glass containers, said glass containers being capped with paper caps which are made out of virgin spruce pulp, the same pulp, or the same material, as plaintiff's exhibit 2, Pure-Pak Container.

Mr. Schaefer: That is agreeable.

Mr. Gariepy: Q. Mrs. Koller, have you any interest in the outcome of this litigation?

A. No.

Q. Have you been paid any compensation with regard to these various tests you have performed, in making inquiry on the contents of the milk in the paper containers?

A. That is in my regular line of work, I am paid by the town or village checking up.

Q. Is your compensation measured as to whether you found one result or the other?

A. No.

Mr. Gariepy: That is all. Mr. Rall has some questions for the witness.

Direct Examination by Mr. Rall (Resumed).

614 Q. The counts you have referred to in giving the results of the tests of milk are as to the number of bacteria per cubic centimeter?

A. Yes.

Q. And that is the standard method of determining the number of bacteria, or giving the results of the number of bacteria found in the milk?

A. Yes. That is in accordance with the latest edition of Standard Methods. It has changed, beginning the first of July, by the way.

Q. Were the methods you used in determining the number of bacteria per cubic centimeter in the milk, which you obtained from glass bottles, and which you obtained from paper containers, the standard methods used by public health officials in the United States for making that determination?

A. Yes.

Q. Do you know whether or not it is the same method as is prescribed by the Chicago Board of Health for the making of similar tests on liquid milk and cream in the City of Chicago?

A. I am quite sure it is.

Q. Have you an opinion as a bacteriologist whether or not the plaintiff's Pure-Pak Container, which is
615 identified here as plaintiff's exhibit 2, is a sanitary container for the sale of liquid milk and cream? Have you an opinion?

Mr. Schaefer: That is objected to.

A. Yes.

Mr. Rall: Q. Will you state what that opinion is?

Mr. Schaefer: That is objected to.

The Master: What is the ground of objection?

Mr. Schaefer: I object because the witness only shows some five or six—make it ten, if you will—rinse tests; that

is the extent of her work on the paper containers—five or six rinse tests, and the result of those plated out, and, now he asks her for an opinion.

Mr. Rall: Also she has made tests of the milk out of samples bought at random.

Mr. Schaefer: Five or six tests.

The Master: I sustain the objection.

Mr. Rall: I offer to show that the opinion of this witness is that plaintiff's exhibit 2 is a sanitary container for the sale of liquid milk at retail.

The Master: I will let you make a record on it. I think that is a conclusion for the Court, if it is one of the issues in this case.

616 Mr. Rall: There is no question about it being one of the issues.

The Master: And I think her opinion is based on or is largely based upon the reports which have been made by others to her. She said that she made no tests whatever of the paper itself.

Mr. Rall: The proof of the pudding is in the eating, if the tests that she made on the liquid milk and cream that came in these containers would indicate to her as a bacteriologist that these were proper containers.

The Master: I might be to her, but the City of Chicago might have much more rigid requirements. There are situations in the City of Chicago which might be radically different from those in other municipalities and there might be a very much more stringent and rigid requirement in the city. Some bacteriologist outside might think them sanitary and yet the official action of the City of Chicago might require a whole lot more rigid requirement.

Mr. Rall: I concede that any opinion that any witness expresses is not binding on the Court, but would depend the extent of the investigation made by the witness; the witness' training and lack of bias or prejudice. It seems to me that the opinion, at least, is admissible.

617 The Master: I sustain the objection, but you may make your record.

Mr. Rall: Q. Do many of the dairies which sell liquid milk and cream in the suburbs, for which you do laboratory work, also sell milk and cream from the same distributing points in the City of Chicago?

A. Suburban milk doesn't come into Chicago.

Q. Pardon?

A. Suburban milk doesn't come into Chicago, because their ordinance says that the plant must be located within the Chicago limits.

Q. You are referring now to the pasteurization plant?

A. That is right.

Q. So that the suburbs that you are interested in, or that you have done work in, do not have common pasteurization plants with the plants in the City of Chicago, with the milk that is distributed in the City of Chicago; is that correct?

A. The only thing we have in the suburbs are what they call receiving stations, that is, the milk comes in from farms and is transported, raw, to a Chicago plant; but no pasteurized milk goes in from the suburbs, to my knowledge, that is sold in the City of Chicago.

618 Q. Is milk sold in the suburbs that comes from a pasteurization plant in the City of Chicago?

A. Yes, a good deal of it.

Q. And those are the trucks that you referred to, from which you took your tests of milk coming into the suburbs from Chicago?

A. That is right.

The Master: Q. Do you know whether they came from Chicago in all instances?

A. A great many of them do, because they have the address on the truck, whatever plant it is from.

Mr. Schaefer: The witness has testified to no such tests—just so the Master will understand the record, the witness has testified to no such tests.

The Master: Well, she is testifying now.

Mr. Schaefer: I see.

The Master: Q. You say the addresses appeared on these trucks from which you bought the milk?

A. For instance, Wrightwood Dairy.

Q. Any other instances?

A. Yes—Bowman's and Bordens always have an address on them, too.

Mr. Rall: Q. In what methods are milk and cream distributed in the suburbs with which you are familiar?

619 A. They are distributed to the stores and distributed to the milk depots and distributed in retail routes.

Q. House to house?

A. Yes, house to house.

Q. State whether or not that differs from the method of distribution in the City of Chicago?

A. I don't believe it does.

Q. What are some of the pasteurization plants in the City of Chicago, if you know of any, from which milk is distributed to consumers in the City of Chicago and also to consumers in the suburbs, with which you are familiar?

Mr. Schaefer: The only objection that I would make is on the ground of materiality. It is not helping us go forward with the issues here.

Mr. Rall: There is a suggestion here that when you cross the city limits of the City of Chicago, you become a different kind of milk, or when you buy Borden's milk from one plant, if you buy it outside of the city limits it is a different sort of purchase.

The Master: Read the question.

(Pending question read by Reporter.)

(Discussion off the record.)

The Master: I will put the question this way:

620 Didn't you testify here a little while ago that in every instance where you bought milk from trucks in the suburbs, those trucks were selling milk that had been pasteurized in the City of Chicago?

A. Yes.

Mr. Rall: Q. And is milk from those plants also sold in the City of Chicago?

A. Yes.

Mr. Schaefer: If the Master please, that is not the testimony as I understand it, and it is not the fact.

Mr. Rall: That is what I was trying to show.

Mr. Schaefer: The tests that the witness has recounted here are, none of them, tests on milk which was pasteurized in a dairy operating under a permit issued by the City of Chicago. We have checked that by telephone. None of them are. The only testimony with respect to taking a bottle from the truck was with respect to Borden-Wieland's division at Forest Park, which plant does not have a City of Chicago permit, and milk pasteurized in that plant is not permitted to be sold in the City of Chicago.

However, I will stipulate to this fact:

That milk which is pasteurized in the City of Chi-
621 cago is sold in the suburbs of Chicago.

Mr. Rall: And from the same source is sold within the City of Chicago?

Mr. Schaefer: Yes. Let me elaborate on that a little. My impression is and I am willing to stipulate that there are dairies in the City of Chicago which pasteurize milk, sell that milk in the City of Chicago, and also sell milk in the suburban communities.

Mr. Rall: That's right.

Mr. Schaefer: Is that what you mean?

Mr. Rall: Yes.

The Master: We will take a recess.

(Recess.)

The Master: Are you through with your questions?

Mr. Rall: I have one or two questions:

Q. Did any of the tests that you made on liquid milk or cream taken from paper containers show a larger number of bacteria per cubic centimeter than is permitted by the ordinances of the City of Chicago?

A. No.

Q. In addition to the Chicago address on these trucks, did they also have a permit number from the Board of Health of the City of Chicago?

A. Yes, they all carried a permit number.

622 Mr. Rall: That is all.

The Master: Cross-examine.

Cross-Examination by Mr. Schaefer.

Q. In your direct examination, Mrs. Koller, you testified as to certain tests which were made on samples from the Borden-Wieland Dairy, which were submitted November 29, 1938 and concerning which you reported on December 2, 1938. The tests which you made at that time on those samples were all tests on paper containers, were they not?

A. Yes.

Q. And you also testified on your direct examination as to a report which you made on samples purchased from the Bowman Dairy, February 21, 1939, concerning which you reported under date of February 23, 1939. You testified that one of those samples was a paper container which was purchased at an A & P store.

A. Yes.

Q. In what municipality was that purchased?

A. West Chicago, I believe. Is that the one? You can tell who that report is made out to.

(Mr. Schaefer hands paper to the witness.) Yes, that is West Chicago.

623 Q. You reported at that same time on a test which you made on a quart glass bottle taken from truck No. 1665. What was the City of Chicago Permit number of that truck?

A. I don't know. You see, before we let this Bowman and Borden milk go into the suburbs we would get a letter from Dr. Bundesen stating that it was under his supervision, and I have those letters on file at the laboratory. So, we take it from that, that whatever they sent out, they have a Chicago permit. I have noticed that most of those trucks have a number on the side.

Q. Where was the milk, which you tested from the paper container, pasteurized?

A. I presume that would have to be—

Q. Do you know?

A. No, I don't know. I know it would be out of Chicago.

Q. Do you know where the milk, which was contained in the glass bottle, was pasteurized?

A. No, I don't know. I have no way of knowing.

Q. Do you know whether the milk in the two bottles was pasteurized on the same days?

A. Only from the date on the cap.

624 Q. Do you know whether that was pasteurized on the same day?

A. No, I don't know. I presume they would put the right dates on it.

Q. Do you know whether they were pasteurized on the same day?

A. No, I don't know.

Q. All of the tests which you have made with respect to bacterial count of paper containers have been rinse tests, have they not?

A. Well, all that we have on there, yes.

Q. Have you made any others?

A. I did some just for my own observations, but I didn't make any report to any one on them.

Q. Those concerning which you testified this morning have been—

A. Request tests.

Q. All of them rinse tests?

A. Yes.

Q. At whose request did you make those tests?

A. The different health officers, whatever health officer's name appears on the top of the report.

Q. When were you first employed by the Fieldcrest Dairies, Incorporated?

A. I don't know that I am employed by them.

625 Mr. Gariepy: She did not say she was employed by them, on direct.

Mr. Schaefer: Maybe she will say it now.

Mr. Gariepy: She just said she didn't know as she was.

Mr. Schaefer: Q. Are you employed by the Fieldcrest Dairies, Incorporated?

A. I think twice in the time we have been in business we have done some work for them direct.

Q. When was that?

A. Once was in regard to an ice-cream plant. It had nothing to do with the milk.

Q. When was that?

A. Last year some time.

Q. Some time in 1938, do you mean?

A. 1938.

Q. What compensation did you receive at that time?

A. I sent them a bill for whatever time I put on it. I made a trip up to Pearl City Ice-Cream Plant.

Q. What compensation did you receive?

A. I don't remember exactly. I would have to look at the books. It was for time and material and labor basis.

Q. You have no idea at the present time as to 626 what your compensation was?

A. I know it was less than seventy-five dollars. I don't know exactly what it was.

Q. What other work have you done for the Fieldcrest Dairies, Incorporated?

A. Off hand, I don't remember any.

Q. You mentioned "twice"?

A. I think twice, but I don't remember what the other time was now. I will bring in the ledger, if you want to see it.

Q. Were you ever employed by the Dean Milk Companies, any of them?

A. I was referring to Fieldcrest and Dean as the same. I don't know that they are.

Q. Did you ever receive any money for compensation for any work which you did with respect to the Pure-Pak Containers?

A. Not a nickel, no, sir.
Q. You did not?
A. No, sir.
Q. What work have you done with respect to those containers?
A. Well, I did about three months of reading of everything that I could get, and I made up a report
627 for Dr. Watson of the Glen Ellyn Health Department, but I did that because I was paid by the town. I was not paid by Dean.
The Master: For whom did you make this trip east to have this conversation with Dr. Breed?
A. Myself—for the laboratory.
Q. What?
A. I did that at my own expense, for the laboratory.
Q. Didn't anybody pay you back your expenses?
A. No. That was because we wanted to put in paper testing equipment and I wanted to see what they were using up there. It was really a personal trip.
Mr. Schaefer: That is all.
The Master: Did I understand you to say you were a bacteriologist?
A. Yes.

Redirect Examination by Mr. Gariepy.

Q. How long have you been such?
A. Well, I started my bacteriological work with Dr. Maximow in 1926, I believe it was. I worked with him from 1926 to 1928 and he died.
Q. Where else did you do bacteriological work than with him?
A. I studied T. B. with Dr. Sweeney at the Tuber-
628 culosis Sanitarium.
Q. How long?
A. I went out there three days a week for a long time, to get experience.
Q. How long?
A. Between one and two years.
Q. Then where else did you do bacteriological work?
A. At the Washington Park Hospital.
Q. How long were you there?
A. I think about six months. I went in there to study venereal diseases.

Q. After your service at the Washington Park Hospital, where did you go?

A. I did that part time. We had our own laboratory, I thought the more I could see of the things I wanted to know, the better is would be in our own laboratory.

Q. Mr. Schaefer asked you concerning compensation from Dean or from Fieldcrest. Have you ever been promised any compensation from Dean or Fieldcrest relating to the matters under inquiry now, today, that is as to paper containers or counts?

A. No.

Q. You have no agreement for any?

A. No, sir.

629 Q. No agreement of any kind?

A. No, sir.

Mr. Gariepy: That is all.

Mr. Schaefer: No further questions.

The Master: You are excused.

(Witness excused.)

PAUL HUBERT TRACY, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. Please state your name, Doctor.

A. Paul Hubert Tracy.

Q. Your address?

A. 409 Delaware, Urbana, Illinois.

Q. What is your business or occupation?

A. I am Professor of Dairy Manufactures.

Q. How long have you been such?

A. I have been connected with the University of Illinois since 1920.

Q. What positions have you held with the University of Illinois since 1920?

A. I started as an Assistant Dairy Manufacturist. My rank has increased until at the present time I am a full Professor. At the present time I am in charge of the

630 Division of Dairy Manufactures, in charge of the teaching of a course in Market Milk; a course in Condensed Milk manufacture; a course in Ice-Cream Manufacture; a course in Milk Product Judging; a course in Dairy Plant Management; advanced undergraduate course in Dairy

Manufactures; graduate course in Dairy Manufactures; research work in Dairy Manufactures. I have the management of the University Creamery. That about takes it all in.

Q. What college degrees do you hold and when and where were they received?

A. B. S., 1920—University of Illinois; M. S., 1922, the same institution; Ph. D., 1930.

Q. What are your duties and responsibilities in these various positions you hold at the University?

A. Those have been pretty well outlined above: teaching and research work and creamery management.

Q. Are you a member of any honorary societies at the University, scientific societies?

A. Yes.

Q. How many?

A. Alpha Zeta, that is an honorary undergraduate fraternity. Gamma Sigma Delta, honorary society of Agriculture. Phi Kappa Phi, all-University honorary society. Sigma Xi, scientific honorary society. That is all of 631 them.

Q. What types of research have you conducted?

A. Research work on ice-cream, condensed milk, market milk, the various phases of the manufacturing problems relating to the manufacturing and distributing of these products. Also consumer studies, and sanitary problems connected therewith.

Q. Have you published any scientific articles on this research work?

A. I have.

Q. How many?

A. Approximately one hundred, I guess.

Q. Have you made a scientific and laboratory analysis of the study of the sanitary aspects of the paper milk containers?

A. Dr. Prucha, who is head of the Department of Dairy Bacteriology—he and I have a joint study of the single service paper milk containers.

Q. How long have you had that?

A. It started along in February, 1937, I believe.

Q. What types of paper containers have you studied?

A. We have studied the type of container which is prefabricated and which requires a special machine for filling, an example of which is the American Can. We have

studied also the type of container which is pre-fabri-
632 cated and which makes use of the regular glass milk bottle filling machine, as exemplified by the Seal Rite. We have studied the type of bottle which is formed, paraffined, filled and sealed in the plant itself, that is the dairy plant, as exemplified by the Pure-Pak.

Q. Pure-Pak, referring to plaintiff's exhibit 2, standing before you?

A. That is right.

Q. Have you had occasion to visit the mill where the pulp was made, in connection with the Pure-Pak?

A. We have visited the mill at Cherry River, West Virginia, which, I believe is the mill where the paper for the Pure-Pak bottle is put out, or made, as used by Dean.

Q. Have you studied the sanitary quality of the paper in the paper containers?

A. As I mentioned before, Dr. Prucha and I have a joint project on this subject, and together we have studied the sanitary aspects of the paper-making and of the paper containers before and after being paraffined, and the milk itself after being put into the paper container, and the sanitary aspect of the paraffining process, also the study of the practicability of paper containers, and plant
633 operations and the consumer reaction towards that container.

Q. In connection with the Dairy Husbandry Department of the University of Illinois, is there a small dairy there operated?

A. We have a commercial operation in our experimental laboratory for the purpose of making our teaching and our research more practical.

Q. Approximately how many quarts of milk are bottled there daily and sold?

A. Approximately five hundred quarts.

Q. What are the milk products that are manufactured and sold by the University Creamery?

A. We manufacture and sell: butter, cream, chocolate milk, cultured milk, ice-cream, ice-cream mix, evaporated milk, concentrated milk, sweet condensed milk, cottage cheese, neufchatel and piminto cheese.

Q. Have you experimented with the paper—

A. I haven't finished.

Q. Continue.

A. Muenster cheese, chedder cheese, sterilized evaporated milk, honey cream. That is about all.

Q. In connection with your work in the Dairy Husbandry Department, have you performed certain experiments with paper milk containers with regard to their being a container for use in delivering milk?

634 A. Yes, we have. We have used the single service paper container in our commercial set-up, which forms the basis also of our experimental studies.

Q. Since when has that been done?

A. About March, 1937.

Q. How much milk of the approximate five hundred quarts was delivered in paper containers from the University Creamery?

A. One hundred per cent.

Q. Does the dairy supply any paper containers?

A. The Creamery?

Q. Does the Creamery supply any paper containers to the University Hospital?

A. We supply retail consumers and the homes in Champaign and Urbana, the University Hospital and the University dormitories and our sales room.

Q. What types of containers do you use there, Doctor?

A. Do you mean what type of paper containers?

Q. Yes.

A. Those three that I mentioned previously, Seal Rite, Pure-Pak and American Can.

Q. That has been going on for how long a period of time?

A. Pretty regularly since March, 1937. Of course, intermittently we would go back to glass for a short time and then return again to paper. The idea was to enable us

635 to set down the consumer reaction of the housewife towards the type of milk container she was being served with.

Q. What research work did you do in connection with the use of the paper container, especially the Pure-Pak?

A. Well, I mentioned going to the mill to study the source of the paper.

Q. Outside of that, Doctor?

A. We studied the conditions under which the container was printed.

The Master: Who studied that? You say "We".

A. We observed it.

The Master: Q. Tell us what you did, now; not what "we" did.

A. I am part of "we".
Q. Who is the other part of "we"?
A. Dr. Prucha.
Q. In order to save time later on, on cross-examination, try to distinguish between what you did and what Dr. Prucha did?
A. What I did?
Q. Yes, tell us what you did, and then when Dr. Prucha did something in these experiments, you just distinguish that.

A. It is going to be a little difficult, because so
636 many things we did together, you see.

Mr. Gariepy: If you did a part of it, you just tell us what you did.
The Master: Yes.
The Witness: Shall I proceed?
Mr. Gariepy: Yes.
The Witness: Well, I still think it is incorrect to say "I", because many of these things, one man may do one part of it and the other man may do the other part, and I couldn't say except we, both, got our result; we checked the sanitary condition of several hundreds of the Pure-Pak Containers before and after paraffining.

I checked certain of the physical aspects of the paper container, for example, water absorption, bulging, consumer acceptance.

Mr. Gariepy: Q. What did you observe upon your trip to the Cherry River Paper Company's Mill, especially with regard to sanitary conditions?
A. We went all over the mill, from the logs to the finished paper and we took samples.
The Master: Q. Is that you and Dr. Prucha?
A. Dr. Prucha and I, we took samples of the pulp of the different steps in the different processes of making the paper, as well as the completed paper itself.

637 We took samples of the water that they use for treating the pulp, as you understand, in paper making, they use a tremendous amount of water. We took samples of the water before and after it was chlorinated.

These samples were taken with us back to our laboratory at Urbana and we arrived there on a Sunday afternoon and I worked Sunday afternoon plating these out.

Mr. Gariepy: Q. What other things did you observe at the Cherry River Paper Company Mill with regard to sanitary conditions there, other than checking of the water?

A. Seeing the fact that the pulp was put into the water and was sterilized, we simply familiarized ourselves with the method of making paper as practiced in this plant, and took those samples.

Q. What did you find with regard to the sanitary conditions being employed; or unsanitary conditions, from your observations there?

A. Of course, we did not have a yardstick to measure sanitary conditions in a paper mill. We don't have a yardstick to measure sanitary conditions in a paper mill, as yet. We have no standard set-up, but the results of our tests would indicate that their methods were sanitary.

638 The paper was quite low in bacteria. The water that they used showed no B-coli bacteria, that is, the water that they used, after being chlorinated, showed no B-coli, and the finished paper itself was very low in count.

Q. From there you went to the Gardner-Richardson Mill?

A. No, I never was at the Gardner-Richardson Mill.

Q. What did you observe about printing the container?

The Master: Where?

A. I did not go to the Gardner-Richardson Mill.

Mr. Gariepy: Q. You did not take a trip there?

A. I went to the Chicago Paper Company.

Q. Did you perform any tests with regard to the subject matter of leakage in these Pure-Pak Containers?

A. Only from the standpoint of observation; we observed them for leakage.

Q. For how long a period of time?

A. I observed for leakage.

Q. Tell what you observed?

The Master: Where was this you did your observing?

A. At the filler, at the machine, where the bottles were filled.

The Master: Where was this?

A. In my laboratory in the Dairy Manufactures Building.

639 Mr. Schaefer: Q. Do you mean in your laboratory, Doctor?

A. Yes, the commercial unit of the laboratory. This filling machine is in the commercial plant—not up in the laboratory.

Mr. Gariepy: Q. Were these several hundred containers that you tested, that you testified to, taken from that machine, Doctor?

A. That is right.

Q. What did your tests show with regard to bacteria count on the several hundred containers that were not paraffined?

A. Do you want a specific answer on that?

Q. Yes.

A. Then I will have to refer to my notes.

Q. You don't have it, off hand?

A. As I remember it, the highest was about 18 to 20 bacteria per bottle.

Q. And the lowest?

A. Well, several of them showed no growth on the plates, indicating sterile condition of the bottle.

Mr. Schaefer: So that we can straighten it out now, I will ask the Doctor one question:

Q. Those are rinse tests, Doctor?

A. Those are rinse tests, yes, sir.

640 Mr. Gariepy: Q. These were rinse tests?

A. Yes.

The Master: Aren't these the figures that have been obtained as a result of Dr. Prucha's tests?

Mr. Gariepy: Dr. Prucha's tests, Master; Dr. Prucha dictated it, which is the only stipulation between the counsel for the plaintiff and for the defendants; it is the result under the technique and the procedure as outlined by Dr. Arnold. It is nothing with regard to these tests at all.

Mr. Schaefer: Let's have the question read.

(Question read by the Reporter, viz:

"Q. Were these several hundred containers that you tested, that you testified to, taken from that machine, Doctor?"

Answer read:

"A. That is right."

Question read:

"Q. What did your tests show with regard to bacteria count on the several hundred containers that were not paraffined?")

A. That were not paraffined?

Mr. Gariepy: Q. That is right, Doctor.

A. I haven't the counts on that, unparaffined.

Q. How many have you counts on that are unparaffined?

641 A. 128.

Q. What did those counts show?

A. These tests were 100 c. c. rinse tests. 100 c. c. of sterile water was placed in each quart bottle.

The first 25 showed no growth.

The next 35 showed one colony on each duplicate plate.

The next 6 showed no growth on one plate, and two on the other plate.

Do you want me to go into this in detail, like this?

Q. That is close enough. You are giving them in groups there.

A. The next 13 showed one colony on one plate, and two on the other.

The next 4 showed no growth on one plate and three on the other.

The next 4 showed two on one plate and two on the other.

The Master: Do you want to go through all of these?

Mr. Gariepy: Q. What is the sum and substance of them, Doctor?

A. They keep getting larger.

Mr. Schaefer: Then, let's keep going.

Mr. Gariepy: Q. Proceed, Doctor.

642 A. One showed one on one plate, and three on the other.

The next 3 showed none on one plate and four on the other.

The next 6 showed two on one plate and three on the other.

The next one showed one on one plate and four on the other.

The next one showed three on one plate and three on the other.

The next 2 showed two on one plate and four on the other.

The next 2 showed one on one plate and five on the other.

The next 2 showed three on one plate and four on the other.

One showed three on one plate and five on the other.

One showed two on one plate and six on the other.

The next 4 showed four on one plate and five on the other.

One showed five on one plate and five on the other.

Two showed four on one plate and six on the other.

643 One showed three on one plate and seven on the other.

Three showed five on one plate and eight on the other.

One showed eight on one plate and eight on the other.
One showed eight on one plate and nine on the other.
One showed eight on one plate and ten on the other.
One showed nine on one plate and ten on the other.
One showed nine on one plate and eleven on the other.
One showed nine on one plate and thirteen on the other.
One showed eleven on one plate and fifteen on the other.
One showed thirteen on one plate and fifteen on the other.
One showed seventeen on one plate and nineteen on the other.

They should add up to 128. I don't know whether it does or not.

Q. Were these on the Pure-Pak Containers?

644 A. That's right.

The Master: Q. Unparaffined?

A. That's right.

Mr. Gariepy: Q. What is the Public Health Standard on bacteria per quart unfilled glass bottles?

A. U. S. Public Health Standard?

Q. Yes?

A. One per c. c. of capacity?

Q. How much capacity is in the quart bottle?

A. A little less than 950.

The Master: Q. 950—what?

A. C. c.

Q. 950 c. c.

A. Per quart.

Q. How many would that be in a quart, you say?

A. 950.

Mr. Gariepy: Q. Did you perform any tests with regard to paraffine dissolving in the milk?

A. I tried to determine the temperature at which the paraffine would melt and possibly pass into the milk, by setting empty containers in incubators at different temperatures, to determine at what temperatures the paraffin melted sufficiently to pass off on an unwaxed paper, soaked up by the paper, you see. That temperature, with 125 degrees melting point, was 120.

645 The Master: Q. What is the 120?

A. That is the temperature at which the paraffin on these containers melted sufficiently to make a smudge.

Q. To make a smudge?

A. To make a smudge on the paper.

Mr. Gariepy: Q. That is Fahrenheit?

A. Yes, sir.

The Master: Q. What is the 125?

A. The so-called rating or melting point of the paraffin used for treating that container.

Q. You said "125" and "120"?

A. This particular container was paraffined with the 125-degree melting point paraffin; but at 120 degrees the paraffin began to melt sufficiently to pass off into the container. In other words, 5 degrees below the rating for melting.

Q. Let's put this question: You say at 120 the paraffin would make a smudge on the paper?

A. Yes.

Q. It is more difficult for paraffin to get into paper than for paraffin to get off of paper, isn't it, after it is once on?

A. No, I wouldn't think so.

Q. What would you say would be the temperature
646 at which some of the paraffin might come off of the paper after it is once on?

A. That is what I gave you, 120 degrees.

Q. I thought you were giving us the temperature at which it would get into the paper.

A. No—the temperature at which paraffin was applied was 170 degrees, approximately; that is, this empty container was dipped in paraffin at 170 degrees and then the containers after being so treated, were put in incubators at different temperatures, to see at what point paraffin on this container would break away and make a smudge on the paper on which it was placed.

Q. Smudge on the paper on which the paraffin had actually passed?

A. It was on a piece of paper put in an incubator.

Q. The smudge was not on the paper constituting the container, but on another piece of paper?

A. That is right, on the piece of paper.

Q. Wouldn't there be some paraffin come off at 100 degrees without making an actual smudge that you could perceive?

A. I don't believe so, unless you applied friction at some point. Of course, you can take paraffin off at any temperature with friction, but I don't think it would
647 melt and pass into the milk until it was—say—this particular paraffin, 120 degrees.

Q. Let's assume milk is being shaken in this container, as, we will say, a delivery wagon is bouncing over the cobblestone pavement, there is a certain amount of friction as this milk is being shaken up in a bottle; wouldn't some of the paraffin get into the milk, short of 120 degrees?

A. All I can give you is my opinion. I don't think it would, that sort of friction—that is a rolling action, you might say, on the inside. What I meant was some sharp instrument.

Q. A rolling action of the waves on the sand does a whole lot with the sand.

A. That is true, but the only thing I think that would cause any trouble there in that respect would be in case there was a little piece of paraffin in some corner, larger than it should have been, that might break off and get into the milk.

Mr. Gariepy: Q. Doctor, do you know anything about the chemistry of paraffin and its contents?

A. No, I don't.

Q. Do you know the uses of paraffin in food products?

A. The use of paraffin in food products?

648 Q. Yes.

A. Well, I can draw, possibly, only on my boyhood experiences in that respect, the uses my mother made of it.

Q. What use is being made of it today, getting down to modern times.

The Master: We don't want to go that far back.

Mr. Gariepy: Q. That is too far.

A. Well, it is being used in treating a good many food containers.

Q. Name them.

A. All types of waxed papers.

Q. Cheese containers?

A. Cheese, yes. I would say mostly, cheese boxes, butter boxes, milk bottle caps; there is not much, not very much, paraffin on the milk bottle caps, though; drinking cups, that is paper drinking cups.

Q. Jellies and canned goods?

A. Commercially?

Q. Yes.

A. I don't know whether commercial plants use much paraffin on jellies or not, but our mothers do.

Q. That is home canning?

A. Yes.

Q. It was used in home canning?
649 A. Home canning, yes.
Q. What else?
A. Well, they used to make a chewing gum out of it. I don't know whether they do now or not.
Q. How about soda fountain straws?
A. I couldn't say whether they are paraffined or are not paraffined.
Mr. Gariepy: Could we stop now for lunch, Master? It is 12:30.
The Master: We can not finish with this witness, any way. Suppose we come back at 1:45, so that we can finish with this witness and the other witness.
Mr. Gariepy: I sent the other witness away.
The Master: We will recess until 1:45 p. m.
(Thereupon, recess was taken until 1:45 o'clock, p. m. on the same day, July 5, 1939.)

650 • • (Caption) • •

U. S. Court House,
Wednesday, July 5, 1939,
1:45 o'clock p. m.

Met pursuant to recess.
Present: Same as before.
651 The Master: You may proceed.

PAUL HUBERT TRACY, a witness called on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination (Continued) by Mr. Gariepy.

Q. Doctor, have you performed tests in the matter of bacteria count found in the paraffined container?
A. We have.
Q. Have you a report of those tests and that research?
A. I have here—
The Master: What kind of a research is that?
Mr. Schaefer: Off the record just a minute.
(Discussion off the record.)
The Master: Q. Was that a rinse test?
A. Rinse test.

The Master: Is that sufficient, Mr. Schaefer?
Mr. Schaefer: Yes.
Mr. Gariepy: Q. When were these performed?
A. When were they performed?
Q. Yes, Doctor.
A. I can't tell you the exact date, but it is—
Q. Between what dates?
A. It was either late 1937 or early 1938.
652 Q. At the University of Illinois laboratory?
A. Yes.
Q. Your laboratory, as you put it?
A. Yes.
Q. And how many containers did you perform these tests on?
A. We checked first 132 Pure-Pak containers that were paraffined in our plant. They were from eleven different milk plants. That is, the blanks were printed up for eleven commercial dairies and they were sent to us and we formed them, paraffined them, and checked them for sanitary conditions.
Q. Did you paraffin them on the machine of which you had pictures here this morning, which is the same machine as shown in Exhibit 15-A? Mr. Schaefer, have you seen those pictures yet?
A. I don't remember what Exhibit 15-A is.
Q. That is a picture of the machine, showing the different sections of it.
Mr. Gariepy: You saw this, Mr. Schaefer?
The Master: It is the regular commercial—
The Witness: It is a Pure-Pak machine.
The Master: It is a Pure-Pak machine?
The Witness: It is the one we had installed in our laboratory.
653 Mr. Gariepy: Q. This picture that you got, No. 2, general view of Pure-Pak machine from front end, is that the same machine as at Chemung, Illinois, in the Fieldcrest Dairy plant?
A. I couldn't say whether it is the same or not.
Q. Is it the same type?
A. It is similar to it.
Q. Did you give the results of these tests upon the paraffined containers, Doctor?
A. No, sir.
Q. Will you give that?
A. The 132 containers showed the following results:

Forty-three showed no colonies on duplicate plates.

Forty showed no colonies on one plate, but one colony on the other plate.

Twenty-four showed one colony on each plate.

Eleven showed one colony on one plate and two colonies on the other plate.

Four showed two colonies on one plate and two colonies on the other plate.

Three showed two colonies on one plate and three colonies on the other plate.

One showed three colonies on one plate and four colonies on the other plate.

654 One showed nine colonies on one plate and fourteen colonies on the other plate.

And I have data here on three hundred and ninety-five Pure-Pak containers, which were the ones we were using for our own milk supplies.

Q. At Champaign?

A. At Champaign, under the same conditions as the others were studied.

Q. And the sum total, in substance, averaging the bacteria counts on those is what? Just how would you describe the test that you performed on those three hundred and ninety-five, Doctor?

A. These tests were similar to the ones referred to above, that is, they were rinse tests.

Mr. Schaefer: Q. Paraffined by you?

A. By us.

The Master: Q. You participated in them yourself?

A. Yes, sir.

Mr. Gariepy: Q. What did they show, Doctor?

A Ninety-six showed no colonies on either plate.

One hundred and ten showed no colonies on one plate and one on the other.

Seventy-six showed one colony on one plate and one on the other.

Fifty-six showed one colony on one plate and two
655 on the other.

Thirty-three showed two colonies on one plate and two on the other.

Thirteen showed three colonies on one plate and four on the other.

One showed four colonies on one plate and four on the other.

Three showed four colonies on one plate and five on the other.

One showed five colonies on one plate and five on the other.

Three showed five colonies on one plate and six on the other.

One showed seven colonies on one plate and eight on the other.

One showed ten colonies on one plate and eleven on the other.

One showed twenty colonies on one plate and twenty-one on the other.

Q. Doctor, do the results that you have obtained in the performance of these tests show that they are well within the range of acceptability concerning bacteria counts allowed on a milk bottle?

Mr. Schaefer: That is objected to.

656 The Master: I will sustain the objection.

Mr. Gariepy: Q. What is the count of acceptability allowed for bacteria per quart on a milk bottle?

A. You mean in the city of Chicago?

Q. Yes.

A. I understand it is one per cc.

Q. That is 946 per quart?

A. Yes.

Q. And are these figures within the realm of 946 per quart?

Mr. Schaefer: That is objected to.

The Master: Within the what? The realm?

Mr. Gariepy: Within that scope, that limitation.

The Master: It shows on the face of it what it is.

Mr. Schaefer: It shows on the face of it that no comparison is possible.

The Master: Why not?

Mr. Schaefer: On a comparison of that type. You have here a rinse test.

The Master: What?

Mr. Schaefer: What you have here is a rinse test.

The Master: Yes.

Mr. Schaefer: Which the former testimony has indicated will not show a complete number of the bacteria present in the container. That is, you will get the same number again on successive tests—that is Sanborn's testi-

657 mony—running up to ten, ten tests, and he said from ten on the number he found would begin to drop off.

In the first place, you have no standard for the number of bacteria in a paper container. That is Sanborn's testimony.

The Master: He has testified now as to how many bacteria there were. You might put another question, Mr. Gariepy, if you wish.

Mr. Gariepy: Q. Doctor, what tests are usually employed by bacteriologists in ascertaining the number of bacteria counts in a glass milk bottle?

A. Rinse tests.

Q. That is the same test you employed on the paper?

A. That is right.

Q. Is there any other test usually employed to ascertain accurately the amount of bacteria count?

A. In a glass bottle?

Q. Yes.

A. The standard method calls for the rinse test.

Mr. Schaefer: I can shorten it if I could ask him about the paper now.

Mr. Gariepy: Surely, you can ask him about the paper now, if you want to.

Mr. Schaefer: Why don't you ask him the com-
658 parative question about paper?

Mr. Gariepy: Q. Is the rinse test the test usually employed in finding the bacteria count in a paper bottle?

A. It is one test that has been used. We use three different tests.

Q. And what are the three different tests that you employ?

A. We use the standard procedure for glass bottles, which is the method used in describing these results.

The Master: Q. The rinse test?

A. The rinse test. Then we use one method where we added 10 cc. of water, sterile water, to the bottle, and then tried to recover as much of that as we possibly could, dividing it between different plates.

The third one is by adding melted agar directly to the bottle, incubating the bottle with the agar in it in an incubator, and then cutting the bottle off, removing the agar carefully, so as not to break it, and then counting the bacteria growing in that agar disk.

Mr. Gariepy: Q. Are those considered safe and acceptable tests by bacteriologists?

A. Well, we did this work primarily to compare the

659 different methods, and the methods are used by bacteriologists in checking on the sterility or the sanitary condition of different pieces of equipment. The agar disk method is used for determining the sanitary condition of churns, by pouring the agar right on the given surface of a churn, until it solidifies, and then lifting it off carefully and incubating that, to see what bacteria were attached to the agar. A churn is one of those things difficult to check upon, and that method has been used for that purpose.

Q. All those three methods are employed usually in testing bacteria count on glass milk bottles?

A. No.

Q. Which test alone is used?

A. The rinse test. That is the standard procedure for glass bottles.

Q. Are you acquainted with the methods employed in the city of Chicago at dairies for sterilizing glass milk bottles?

A. To this extent; that I have visited dairies in Chicago and I have also familiarized myself with the Kelly ordinance, which specifies the procedure under which glass bottles in Chicago must be treated.

Q. And what is the method employed in the city of Chicago for sterilizing glass bottles?

660 A. Well, there are different methods, depending on the type of bottle washer that is used. In all cases the bottle, after being washed with alkali water, must be sterilized by hot water, steam or chlorine. The larger plants, of course, use the soaker type of washer, which facilitates those operations from a mechanical point of view, eliminating the human element to a certain extent, and I believe they require that the soaker solution—

Mr. Schaefer: Now, just a minute. I would like to know what question the witness is answering.

Mr. Gariepy: If he is acquainted with the methods employed in the city of Chicago at the present time for sterilizing glass milk bottles.

Mr. Schaefer: Let us have the question.

The Master: Read the question and answer.

(The record was read by the reporter as above recorded.)

Mr. Gariepy: Q. Go ahead, Doctor, from where you were stopped.

A. (Continuing.) —have a minimum temperature of 120 degrees F., have a minimum NaOH content, that is sodium hydroxide, of 1.6 per cent, and the rinse bottles be

treated with a minimum chlorine content of fifty parts per million. That is essentially the method. Of course,
661 those are not the details.

Q. Do you know how often the alkali solution is tested and renewed?

A. I think the requirement is once a day and renewal once every two weeks, at least once every two weeks.

Q. In the case of the glass bottle as used in the dairies in the city of Chicago that are not used immediately after the sterilization process, do you know what they do with them?

A. They are required to be kept in a bottle case, inverted, in a place which is not subject to contamination from dust, flies, insects, splash water.

Q. Are there any hazards that are attendant upon the sterilization process that you have just outlined in here, that you have observed, health hazards?

Mr. Schaefer: That is objected to.

The Master: Let him answer.

The Witness: A. As I understand the question, it is: Are there any possible health hazards connected with the operation of the class of bottle washing as practiced in the city of Chicago?

Mr. Gariepy: Q. That is right. As you saw it and observed it.

A. I would say there are these possibilities. The NaOH, sodium hydroxide, content, the solution in the soaker
662 bottle washer, is not always up to the required strength.

The Master: Q. Have you ever observed it as never being up to the required strength?

A. In the city of Chicago?

Q. Yes.

A. I never have.

Q. Then why do you say it is not always up to the required strength?

A. He asked me to comment upon these operations that I have observed in the city of Chicago, from the standpoint of possible hazards from a health angle.

Mr. Gariepy: That is right.

The Master: Possible? I suppose if they did not do it at all, that would be possible too, wouldn't it?

The Witness: That is right.

The Master: Confine yourself to what you think your

observation has shown. Of course, if they do not do it, there is a health hazard.

The Witness: Well, I would take your question to be different from the one asked me. Do you mean the practices I have observed, Mr. Gariepy?

Mr. Gariepy: Q. Yes.

A. Or the health-hazards?

Q. The health hazards you have observed existing in the sterilization process employed in the city of Chi-
663 cago on washing glass milk bottles.

A. If you mean, have I observed any discrepancies on the washing of glass milk bottles in the city of Chicago, I would say no.

Q. The health hazards that are attendant upon the procedures as you know them and as you have observed them are what I refer to.

A. Let me get this straight. I have not seen any discrepancies in the washing of bottles in the city of Chicago, but from my knowledge of the methods I can tell you some of the possible hazards connected with that process. Now, which question am I asked?

Q. Answer the latter question.

Mr. Schaefer: The latter question is objected to.

The Master: It calls for speculation, of course, that the procedure will not be carried out, but I will let him answer. Let us see what are the frailties and weaknesses of this test, in his opinion.

The Witness: A. I have already mentioned the possibility of the strength of the sodium hydroxide solution, commonly referred to as the soaker solution, not being up to standard. The possibility of the spray nozzles being clogged, so the bottles are not being properly rinsed, par-
ticularly in the case of the chlorine rinse. The possi-
664 bility that the chlorine solution is not up to the required standard strength. The possibility that the bottles become contaminated after they have left the washer and before they are filled with milk.

Mr. Gariepy: Q. That is, while being stored?

A. While being stored, or even while passing from the washer, in the case of the soaker washer, directly to the filler.

Q. Have you in your experience, Doctor, ever encountered or do you know, as a bacteriologist, of any such thing as a sterile milk bottle?

A. A sterile milk bottle?

Q. Yes.

A. We have in our examination found bottles that gave no count, which from a bacteriological point of view would be considered sterile.

Q. Have you performed certain experiments with regard to glass bottles at the university creamery, where the soaker type of bottle washer is used, following the methods employed in the city of Chicago, as you have outlined?

A. We have a soaker type bottle washer, which is operated essentially on the standards of the city of Chicago, and it is part of our routine practice to check six bottles from this washer every day, from a sanitary point of view.

665 Q. Have you checked them for a period of twenty-seven days?

A. Yes.

Q. And what did that check show with regard to the matter of sterility or bacteria count per hundred cubic centimeters?

Mr. Schaefer: That is objected to.

The Master: I will let him answer.

Mr. Schaefer: We are getting pretty far afield here, Master.

The Master: I will let him go on for a while and see what he has got in mind.

The Witness: A. Ninety-seven bottles showed no count, no bacteria on the plate.

Thirty-five bottles—these are quart bottles—showed a count of 100 bacteria per bottle.

Thirteen bottles showed a count of 200 bacteria per bottle.

Nine bottles showed a count of 300 bacteria per bottle.

Four bottles showed a count of 400 bacteria per bottle.

One bottle showed a count of 500 bacteria per bottle.

Three bottles showed a count of 600 bacteria per quart bottle.

666 Mr. Schaefer: What was that last, again?

The Witness: I said that three showed a count of 600.

Mr. Gariepy: Q. Doctor, have you had occasion to become acquainted with certain bacteria known as fly pupae?

A. There is not a bacteria called that. There is an insect.

Q. Have you had occasion to find that insect in performing certain experiments?

A. No, I have not. I have noticed reports upon it in the literature.

Q. Have you had occasion to find any such insects in milk containers?

A. I have not.

Q. Would it be possible for said insects or bacteria to be found in the glass bottle after it had been sterilized by the methods employed, as you just described here, that is, found on the inside of the bottle?

Mr. Schaefer: That is objected to.

The Master: Will you read that question, please?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Master: I will sustain the objection. I suppose anything would be possible.

Mr. Gariepy: Q. Doctor, are you familiar with the so-called glass bottle milk caps that we had out here this 667 morning? Have you seen those red caps?

A. Yes.

Q. Have you performed certain tests to ascertain the matter of sterility or unsterility of said caps?

A. No, I have not.

Q. Do you know anything about this matter of the caps being leak-proof or not, these milk bottle caps that you saw used here this morning, or exhibited?

A. Leak-proof?

Q. Yes.

A. I can answer that only from the standpoint of our own experience with that type of cap.

Q. All right, what is your experience with that type of cap?

A. We have found there are times when the machine that sets the cap onto the bottle would be just a little bit off-center and would cut that center disk in such a way that the milk would leak out of the cap when it became warm enough to rise in the top of the bottle or when the bottle was turned over.

Mr. Schaefer: Now, if the Master please, I move to strike that. There is no indication that that condition has ever existed in the city of Chicago.

The Master: Overruled.

Mr. Gariepy: Q. Are these caps that you are referring

to, Doctor, the same caps that we had exhibited here
668 this morning, that Mr. Schaefer and I agreed on as being used in the city of Chicago?

A. The cap that I referred to was the American Seal cap.

The Master: That is not the question. The question is, are they the same ones or the same type that he showed here this morning?

The Witness: They are the same type, but they may not be made by the same people.

The Master: You can show it to him, Mr. Gariepy.

Mr. Gariepy: Q. Is this it? (Handing cap to the witness.)

A. It is that type, but isn't this the Seal-rite?

Q. I have got that right here.

The Master: It is the same type of cap. He has already testified to it.

Mr. Gariepy: Q. Have you ever observed any leakage in the Pure-Pak container, Doctor, turned upside down, or from any of your tests and experiments on it? I am talking about the closed container with milk.

A. Only where the container has been damaged in some way.

Mr. Schaefer: Just as in the case of the cap?

Mr. Gariepy: He didn't say anything about the cap being damaged. Did you, Doctor?

669 The Witness: In setting the cap on the bottle the plunger which comes down sometimes did not hit square and would cut the cap a little on one side.

The Master: Q. As the usual thing, however, would you say that the cap is not damaged?

A. In the majority of cases it was not damaged.

Q. As a matter of fact, the case that you mentioned would be a very exceptional case, wouldn't it?

A. I never attempted to determine the percentage, but it happened often enough to be somewhat of a nuisance.

Mr. Gariepy: Q. Have you observed the pouring lip on the Pure-Pak container, Exhibit 2 here?

A. Yes.

Q. What has been your experience with regard to finding that a source of contamination or not?

A. On pouring the milk from the container?

Q. Yes, that is right.

A. On tests that we have made, in which we sprayed

the outside of the bottle with a heavy innoculation of prodigiosus, which is an organism which produces a red color and therefore very easy to find on a plate, we have found that the pouring lip of this bottle is remarkably well protected.

Q. Have you experimented with milk-filled Pure-
670 Pak containers?

A. Those were milk-filled Pure-Pak containers that we used in our experiments.

Q. Not with regard to the pouring lip here, but with regard to the matter of expansion of milk and so on, have you experimented with Pure-Pak containers filled with milk in your laboratory?

A. From the standpoint of expanding?

Q. That is right.

A. Yes.

Q. What did you find?

A. We studied the effect of temperatures above freezing and temperatures below freezing.

Q. And what did you find on temperatures below freezing?

A. On temperatures below freezing the milk, naturally, expanded as it was frozen, but never caused the container to break. If you wish, I have a picture showing the milk in one of these containers that has been exposed to 15 degrees below zero for a period of about two days.

Q. Bring it out, Doctor.

(The photograph referred to was thereupon produced by the witness and handed to Mr. Gariepy.)

Mr. Gariepy: Q. This picture was taken by you
671 and this container was one you worked on?

A. It was taken by the university photographer.

Q. Were you present at the time?

A. I was present.

Q. Does it truly represent the bottle as it existed there to the naked eye?

A. It does.

Q. What is the other one, the other glass bottle?

A. That is a glass bottle filled with the same milk and subjected to the same temperature condition.

Q. What time was this taken, Doctor? How long ago?

A. I believe it was in May.

Q. 1939?

A. 1939, yes.

Mr. Gariepy: I offer that in evidence as Plaintiff's Exhibit No. 44.

The Master: Did you want to cancel those two numbers you had?

Mr. Gariepy: Yes, we did, we cancelled the caps.

The Witness: I would like to mention the point that that glass bottle is broken across the bottom already, as well as cracked at the side.

The Master: Q. What temperature was that?

A. Fifteen degrees below zero, Fahrenheit.

Mr. Gariepy: Mr. Reporter, will you mark that, please?

Mr. Schaefer: Q. And the exposure was two days,
672 Doctor, did you say.

A. Yes.

The Master: It may be received.

(Said photograph of paper bottle and glass bottle filled with milk at 15 degrees below zero so offered and received in evidence was marked PLAINTIFF'S EXHIBIT 44 and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. Doctor, have you performed certain experiments with regard to the exposure of milk in the glass bottle and in the paper bottle at high degrees of temperature?

A. We have studied the effect of sunlight upon the flavor of the milk in these two containers. Did you have reference to that?

Q. That is right.

A. Yes.

Q. And what did you find in those experiments, with regard, first, to the paper bottle and, second, with regard to the glass bottle, under the same temperatures?

A. An experiment was performed in this manner: The same milk was used, of course, in those containers. A series of bottles, quart bottles, filled with the milk, were placed in the sunlight directly. Then periodically a bottle
of each was removed from the sunlight and placed in
673 a darkened 40-degree room, for storage. Then twenty-four hours later the milk, after being chilled in this room, held in this room overnight, was removed for organoleptic tests. The results of the organoleptic tests showed that sunlight affected the flavor of the milk in both bottles, that is, both the glass and paper, but to a much greater degree in the case of the milk in the glass bottle than in the case of the milk in the paper container.

Q. How do you account for that, Doctor?

A. The rays of the sun will affect the flavor of any dairy product, particularly the serum portion of that dairy product, the effect of the sun being one upon the protein. In the case of the paper bottle there is a certain filtering action upon the sun's rays that prevents the detrimental ray from entering the inside of the container, to a certain extent. In the case of the glass bottle the rays of the sun apparently pass right through the glass and affect the serum portion of the milk directly, causing a characteristic burnt-like flavor.

Q. Taking milk under ordinary room conditions of 70 degrees, in the glass bottle and in the paper bottle, have you performed experiments with regard to expansion?

A. Yes.

674 Q. In both containers?

A. Yes. What happens, in the case of the glass bottle, is, of course, that the milk expands and will fill the bottle and eventually will force out the cap. In the case of the paper bottle, this particular bottle, there is plenty of room at the top of the bottle for expansion, but the bottle will tend to bulge a little bit.

The Master: Q. Have you performed any experiments to see whether you could observe dirt in one of these paper containers as rapidly as you can in a glass bottle or container?

A. No, sir, I have not.

Mr. Gariepy: Q. Was there any leakage, that you observed, Doctor, taking the milk in the glass and in the paper, other than that you have just described, under room conditions, 70 degress temperature, say?

A. No leakage took place in either one, except what I have mentioned in the case of coming out on top of the disk cap on the glass bottle.

Q. Have you performed any tests, Doctor, with regard to the Pure-Pak container and its ability to resist breakage?

A. We performed what we call a compression test on
675 all of the paper bottles. This work was not done by me, being done in the material testing laboratory of the university engineering department. I observed the results. The bottles were simply placed in this machine and compression tests were given them, and at the point where the bottles would break the pressure was measured.

Q. What pressure was that?

A. I would have to refer to my notes to give you that exactly.

Q. You may refer to them. You cannot recall now offhand?

A. Well, it was over a hundred pounds in one direction and three hundred pounds in the other direction, as I remember.

The Master: Q. In which direction was the heavier pressure? From the top to the bottom?

A. On the side.

Q. On the side?

A. On the side, yes.

Mr. Gariepy: Q. Take it in vertical position first, Doctor; how much pressure would it stand?

A. An average of twelve bottles test was 87 in the upright position.

Q. Eighty-seven pounds?

A. That is right.

Q. What was the other, with the V side up?

A. With the V side up it averages about 320 pounds.

Q. By V side up, you mean like that (demonstrating).

676 A. Like this (demonstrating), on the side, with the V side up.

The Master: Q. What do you mean by the V side?

A. Like this (demonstrating).

Mr. Rall: The gable.

Mr. Gariepy: Q. It maintained a flat 300 pounds?

A. Yes.

Q. Show the other position, Doctor.

A. (Demonstrating.) That averaged about 90 pounds. This one is 87 pounds.

The Master: Q. That is vertical, upright?

A. Yes.

Q. Eighty-seven pounds?

A. That is right.

Mr. Gariepy: Q. Now, have you performed any experiments or tests in regard to the warming up action of milk in each container?

A. Yes.

Q. When did you perform those tests, and what did they show?

The Master: When were the tests, also.

Mr. Gariepy: Q. Yes, Doctor, when were they?

A. The tests were performed in 1937. I cannot give you the month.

Q. All right, what were the tests?

677 A. Milk in paper and glass bottles, the same milk, of course, was exposed to room temperature and the temperature changes in those milks observed over a period of three hundred minutes. I have two different tests here. I will have to give you these separately.

This test I am going to give you first, the time of the test was six hours rather than three hundred minutes. The room temperature in this case started off at 96 degrees. The temperature of the milk in the paper bottle was 34 degrees F., in the glass bottle was 34 degrees F. After six hours the temperature of the milk in the paper was 59.8 degrees F. and that in the glass bottle was 87.5 degrees F.

In the other test, the temperature of the room was lower, starting at 72.5 degrees F. The temperature of the milk in the paper and glass containers was 42.8 at the beginning. After seven hours exposure the temperature had risen in the paper to 53.6 and in the glass to 58.64.

Q. How do you account for the increase or the rise in temperature or this warming-up action in the glass over that in the paper on these two tests?

A. The paper has an insulating value which the glass does not have.

678 The Master: The paper has what?

Mr. Gariepy: Insulating value.

The Master: Q. In short, you found that the warming up was more rapid in the glass bottle than in the paper container?

A. That is right.

Mr. Gariepy: Q. Did I ask you concerning the flavor of the milk in the paper container and in the glass container after being exposed to sunshine? Did you give that, Doctor?

A. Yes, sir.

The Master: I think he did.

Mr. Gariepy: All right.

Q. What experiments and experience have you had with this matter of delivery of milk to residences in Urbana, Illinois, in the paper bottles?

A. We have delivered--

Mr. Schaefer: That is objected to as immaterial.

Mr. Gariepy: I think it comes back to the same ques-

tion the Master has raised several times, that there is a hiatus in his mind concerning the experience in other communities with regard to the use of the paper bottle, on which we are going to submit briefs.

The Master: I suppose that the matter of carrying
679 milk probably involves the same problems in one community as in another. They have to carry it some way. I assume the conditions are about the same. I think I will let him answer, and you can cross examine, to show if there are any differences that might affect the result. Have you started your answer, Doctor?

The Witness: Not yet.

The Master: Read the question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

The Witness: A. As I previously stated, we have been delivering milk on our milk route in paper bottles off and on since March, 1937.

Mr. Gariepy: Q. What have you done in the matter of the delivery of milk to places or residences under quarantine, in Urbana, Illinois, as to the type of container used?

Mr. Schaefer: That is objected to.

The Master: I will let him answer.

The Witness: A. We have always used paper containers, or since I have been connected with the university we always used paper containers.

Mr. Gariepy: Q. In those instances?

A. In those instances when the paper containers
680 were available. When they were not available, of course we used glass, which was left at the house and never brought back.

Q. How many years, that you know of, have you used paper in these instances you referred to, at quarantined places?

A. Since 1927.

Q. Has the use of those paper containers for the delivery of milk resulted in any pathological disturbances, to your knowledge and observation?

The Master: What do you mean, in those instances? Where there was contagious disease?

Mr. Gariepy: That is right.

The Master: Can you answer that?

The Witness: A. Are you referring to the cases of quarantine or the general use of these paper bottles?

Mr. Gariepy: Q. Take the case of quarantine alone.

A. No.

Q. Now, in cases where there has not been quarantine you have used five hundred quarts a day, as you have related?

A. That is right.

Q. What did you observe there with regard to pathological disturbances? Any?

A. There has been none brought to my attention.

681 The Master: I don't know what you mean by pathological disturbances. However, he says there has been none brought to his attention, if he knows what you are driving at.

The Witness: Sickness resulting from these paper containers.

Mr. Gariepy: Yes, that is right, disease caused by any contamination, affecting people; children becoming sick from taking the milk.

The Master: Go ahead.

Mr. Gariepy: Q. Doctor Tracy, have you in your experience and in your experiments and research work ever become acquainted with the phrase "standard milk bottle"?

A. Standard milk bottle?

Q. Yes.

A. No, sir.

Q. Is there any such article or receptacle in the trade known as the standard milk bottle?

Mr. Schaefer: That is objected to.

Mr. Gariepy: Q. Or among the public authorities?

The Master: I will let him answer that question.

The Witness: A. No. There is a standard glass milk bottle, but there is no standard milk bottle that I know of.

The Master: Q. But until these paper bottles were

682 used, there was only one type of container, wasn't there, and that was the glass bottle?

A. No. There were buckets and cans, containers of that type.

Q. I am talking about bottles.

A. Only one type of bottle, yes, glass bottles.

Q. If you are familiar with all of these milk regulations, possibly you would be familiar with the regulations of the City of Chicago as to standard milk bottles.

A. The only standard milk bottle is the one that is the standard glass milk bottle, that I know of.

Q. Then that would mean a standard bottle, wouldn't it?

A. It is a standard glass milk bottle.

Q. But if there were no paper bottles in use, the standard bottle would be the glass bottle, wouldn't it?

A. I interpreted his question to mean a standard set up on the books and records.

Mr. Schaefer: Oh, no.

Mr. Gariepy: Read my question, Mr. Reporter, where I first asked about this.

(Mr. Gariepy's question was read as follows: "Is there any such article or receptacle in the trade known as the standard milk bottle?")

The Master: In the trade covers a broad ground. That might be in the trade in Chicago. It might be in the
683 trade all over the country.

Mr. Gariepy: Well, I will withdraw the question and ask another one.

The Master: I would like to have the witness' answer here on that question, whether he can say now that there is no such thing as a standard milk bottle, when he knows that in the city of Chicago they have such a regulation and it therefore must be known to the trade in the city of Chicago.

The Witness: A. My answer to that question would be based upon an interpretation of the meaning of "standard."

The Master: Q. If you were doing business in the city of Chicago and knew that in the city of Chicago they are not using paper containers, what would you think they meant by a standard milk bottle?

A. I would expect them to mean a glass bottle.

Q. Of a certain general size and shape, wouldn't you?

A. Of a certain general size and shape.

Q. In most cases the bottle would be a little narrower at the top than at the bottom?

A. That is right.

Q. Bulging out a little bit near the middle of the bottle, wouldn't it?

A. Not entirely, because they are using jugs now, which are straight up and down.

684 Q. But, generally speaking, you would have a pretty good picture in your mind as to what they meant by a standard bottle in the city of Chicago, wouldn't you?

A. Yes, I would have a pretty good idea.

Q. Although there may be some variations?

A. That is right.

Mr. Gariepy: Q. Doctor, are there variations in the types of glass milk bottles used as to shapes and sizes?

A. That is right.

Q. And are you acquainted with this gallon glass container that they use in the city of Chicago, with a paper cap?

Mr. Schaefer: That is objected to. I have not heard of any such thing.

Mr. Gariepy: We are bringing one over, Mr. Schaefer.

Mr. Schaefer: I will object to that, on the ground of immateriality.

The Master: Let us see what the witness knows about it.

Mr. Gariepy: We are bringing one over from the library now. We picked up two of them this morning.

The Master: From the library?

Mr. Gariepy: My library. Gallon glass containers, with paper caps, called standard milk bottles apparently by the Board of Health.

685 The Master: What shape are you talking about?

Mr. Gariepy: They are very short-necked and are not anything that has been on display here yet, something new, but they are used every day and the ordinance allows it. They will be over here in a few minutes and we will proceed and I will show them to the doctor.

Q. Doctor, have you made any tests with regard to ascertaining the flavor in paper bottles and the flavor in milk bottles made out of glass?

A. That is probably the first test that we made.

Q. When did you make those?

A. In the spring of 1937.

Q. What did they show?

A. They showed no effect in the paper upon the flavor of the milk.

Q. How many times did you perform those various tests, to note if there was any change in flavor?

A. Innumerable times. I could not tell you the exact number. Probably hundreds of times.

The Master: Q. I suppose if any paraffin gets into the milk it rather has the effect of making the milk appear to be more creamy?

A. No. The paraffin solidifies as soon as it gets into the milk.

Q. Does it?

A. If the milk is kept cold; it is lower than the melting point of the paraffin.

686 Mr. Gariepy: Q. And when it solidifies, Doctor, and when you drink the milk and it happens to have some paraffin in it, how does it taste?

A. It gets in your teeth.

The Master: Q. What if you boil the milk?

A. If you boil the milk and the milk gets cool, is cooled, it solidifies it.

Q. If you drink it warm; however, you still get a creamier taste of the milk, is that right?

A. I don't think so. Paraffin has no flavor.

Mr. Gariepy: Q. You could drink it and not know it; it could be in a glass bottle and you would not know it?

A. It is milk.

The Master: Off the record.

(Discussion had off the record.)

Mr. Rall: Q. At what point would paraffin melt?

A. It would depend upon the paraffin used.

Q. This U. S. Pharmacopeia standard 11 paraffin, the paraffin that is used for paraffining Plaintiff's Exhibit 2.

A. Sometimes they use 125 to 127 degrees melting point, sometimes 135 to 137, depending on the season of the year.

The Master: Q. What is the heat that is applied to boil milk?

687 A. Two hundred and twelve, practically.

Q. What?

A. Just a little short of 212.

Q. And what would be a comfortable temperature at which to drink warm milk?

A. Without burning the tissues, it would probably be around 125 degrees F.

Q. And at that point the paraffin would not necessarily be solidified?

A. It probably would be on the way to being melted.

Q. If it were melted at 200 degrees and the milk had cooled off down to about 125, what then?

A. It would still be melted.

Q. The paraffin would still be in liquid form?

A. Yes, but at the low melting point.

Q. Would you say that the amount of paraffin that might come off of the inside of one of these paper containers and got into the milk would be very small and insignificant?

A. (The witness here performed a demonstration on the paper container for the benefit of the Master.)

The Master: The witness just showed me and demonstrated that if the V is spread quickly at the top of the paper container, the straightening out of the surfaces may release a small particle of paraffin on the inside of the container.

688 Mr. Gariepy: That is, opening it other than at the pouring lip, Master, as is customarily used.

The Master: Yes. That is to say, if there were pressure applied to the top of the container in a downward direction, so as to spread the part that is folded in or if the V were spread apart, there might be a particle or two of paraffin released from the inside of the container and fall into the milk.

Mr. Gariepy: Q. Have you in your experiences in the use of the Pure-Pak container, in Urbana or Champaign—where was that?

A. Both.

Q. Both places?

A. Yes.

The Master: It is the same place.

Mr. Gariepy: Q. (Continuing.) —had any occasion to discern or trace any diseases to said condition?

A. I have not.

Q. Is there a certain food requirement concerning fat content in Grade A milk?

A. Do you mean Grade A milk in Chicago?

Q. Right.

A. I believe they have a standard for the fat and solids not fat in the milk here in the city.

Q. How can the amount of cream in the milk, which we will say is not visible in the Pure-Park container,

689 be measured, on Grade A milk?

A. It would be determined by the Babcock test or the official chemical analysis, either one.

Q. Is that the usual and customary test for obtaining the amount of cream in milk, the butterfat content?

A. It is standard procedure. It varies.

The Master: Q. That is to say, in a paper container you cannot see the mark of the cream near the top of the bottle, as you can in a glass bottle?

A. That is right.

Mr. Schaefer: It is a little more than that, if the Master please.

The Master: What?

Mr. Schaefer: It is a little more than that. Do you want to explain what else there is, Doctor?

The Witness: Do you mean the extent of the cream rising?

Mr. Schaefer: Yes. I mean the fact that the cream not only can be not observed, but the cream does not rise to the top in a paper container.

The Witness: I have never made any studies of that, but studies have shown that the cream does not come to the paper top in the paper bottle to the same extent as it does in glass.

The Master: Q. It does not?

690 A. It does not.

Mr. Gariepy: But is it all left in?

A. It is all there, but it does not come to the top of the container.

The Master: Off the record.

(Discussion off the record.)

Mr. Gariepy: Q. Have you had any objections, in your experience, Doctor, upon using the Pure-Pak container for two or three years, in Champaign or Urbana, concerning this matter of the non-transparency of the bottle?

A. To be able to see the cream layer?

Q. Yes.

A. No. There has been no criticism made of the bottle in that respect.

The Master: Q. Now, which is it? You said you have had no experience and now you say there is very little criticism?

A. We put out a questionnaire, in which we asked people to criticize the paper bottle, and there might have been—I would like to refer to my records to be sure—there might have been one or two or more instances where the people mentioned that they could not see where the cream was there. If you want me to, I will check and see.

Mr. Gariepy: Q. Do you have the figures?

A. Yes.

691 Mr. Schaefer: Let us have it. It would be very interesting.

The Witness: Yes, that was mentioned, "Difficult to see the cream line."

Mr. Schaefer: Q. How many out of how many persons answering the inquiry raised that point?

A. I don't believe I have that information.

The Master: Q. What is your best recollection?

Mr. Gariepy: Q. How many people who got the inquiry replied making this answer?

A. Two hundred and twenty-one replied.

The Master: Q. And about how many raised that point, about the cream layer, to your best recollection?

A. Oh—do you have it there, Mr. Schaefer?

Mr. Schaefer: Here. (Handing document to the witness.)

The Witness: A. Thirty-two.

Mr. Gariepy: Q. Thirty-two out of two hundred and twenty-one?

A. Yes.

Q. Or two hundred and twelve, whatever it was.

Mr. Schaefer: Let us have the precise figure.

Mr. Gariepy: Q. What is it?

A. This is a little different questionnaire than the one I was referring to. This was made sixteen months after the paper bottles were used and includes the infor-
692 mation on all three types of bottles.

Q. That is, Pure-Pak, American Can, and the glass?

A. Pure-Pak, Seal-Rite, and American Can.

Q. All right. Go on.

A. One hundred and fifty answered the question there.

Q. And how many replied out of the one hundred and fifty touching the subject of the cream line being visible?

A. Thirty-two. Wasn't that the figure there, Mr. Schaefer?

Mr. Schaefer: Yes.

Mr. Gariepy: Q. And have you a later one, or is this the later one?

A. That is the last one.

Q. What does the earlier one show, Doctor?

A. I haven't any record of the number that mentioned that in the early one.

Q. Doctor, we were asking you a few minutes ago concerning a standard milk bottle. I show you a gallon bottle here, with a cap, entitled "Bowman Dairy Co., Grade A milk, pasteurized, to be sold before noon Saturday, 7524 Central avenue, River Forest, Illinois." I will call that Exhibit No. 45. Have you ever seen that before?

A. That type of container?

693 Q. Yes.

A. Yes, sir.

Q. Is that a standard milk bottle?

A. Again, it depends on your definition of standard milk bottle.

Q. Do you see anything standard about that, as a milk container, for the use of Grade A milk?

A. I would say it is not as standard as the commonly accepted glass milk bottle.

Q. And are these bottles washed the same way as these smaller quart bottles are washed, that you described?

A. Much in the same general way, yes. You cannot use the same machines altogether for them.

Q. Will you look at the top or the cap on this gallon bottle and tell me whether those are the type of caps you had reference to in your testimony as being made out of virgin spruce paper and emitting some leakage on the lip?

A. I did not testify in regard to what these caps were made out of, I don't believe. It is the type of cap we studied, which permitted a certain leakage in the quart milk bottle.

Q. That is the same type of cap?

A. Yes.

Mr. Gariepy: Mr. Reporter, will you mark that gallon jug Plaintiff's Exhibit 45, please?

694 The Master: Off the record.

(Discussion off the record.)

Mr. Gariepy: Mr. Schaefer, you do not deny that these same types of jugs are permitted under your ordinance for the bottling of milk and the sale of milk in the city of Chicago, do you?

Mr. Schaefer: So far as I know, no milk is sold in that type of container in the city of Chicago.

The Master: That is, with the permission of the Board of Health?

Mr. Schaefer: With or without. No milk is sold in that type of container.

Mr. Rall: Why don't you mark them and—

Mr. Schaefer: Bring your man in and let us find out where he got them. We will take care of Bowman.

The Master: I was wondering if you can describe them in the record here some way, instead of putting the bottles in.

Mr. Gariepy: I will describe Exhibit No. 45 as a—

The Master: Describe one of the bottles, without giving it a number.

Mr. Gariepy: All right. A gallon transparent bottle,

containing a cap with the legend "Bowman Dairy Co., Grade A milk, pasteurized, to be sold before noon Saturday, 7524 Central avenue, River Forest, Illinois."

695 The Master: In general its shape is that of an ordinary milk bottle.

Mr. Gariepy: Jug.

The Master: With the top part of the bottle being small, about two inches in diameter, and having a short neck, and then having a shoulder or bulge from the bottom of the neck to about one-third of the way down and then the bottle, having vertical sides down to the bottom, being rounded off just like an ordinary milk bottle. It is just a gallon bottle, with a wider body than the quart bottle. That is about right, isn't it?

Mr. Schaefer: And it is made of glass.

The Master: And it is made of glass.

Mr. Schaefer: That has not been mentioned.

The Master: And contains the words "Bowman Dairy Company, milk of superior flavor," on the side, and also something about chocolate milk there too.

Mr. Schaefer: That is immaterial.

Mr. Gariepy: Yes, there is something about chocolate milk, hot or cold.

Mr. Rall: With a wide bail or handle attached around the neck.

The Master: In order to make it possible to carry the bottle with greater use and facility. The other

696 bottle is substantially the same, excepting that it is marked "Borden-Wieland Products."

Mr. Gariepy: That is right.

Q. Have you tested samples of milk taken immediately after the filling, Doctor, from the Pure-Pak machine, at the plaintiff's plant, or at your plant in Urbana?

A. Tested it in what way?

Q. Testing samples of milk, with regard to ascertaining whether there is any paraffin in the milk as it comes through?

A. Yes, we have tested for paraffin.

Q. And what did you observe?

A. We have found some paraffin in the milk. I think I have a resume of the exact amount, if you want me to give it to you.

Q. Yes.

A. May I read this to you?

Q. Yes.

A. "Careful examination of the opened paper containers filled with a fluid such as water sometimes revealed a few particles of paraffin floating on the surface."

We used the water instead of milk, because the paraffin would show better in the water.

"An attempt was made to determine the amount of this free paraffin by filling eight Pure-Pak containers with
697 water and then filtering the water through Gooch crucibles after the containers had been carried on a milk delivery truck for eight hours. The water from four containers was placed through one crucible and the water from the other four containers was filtered through a second crucible. The average weight per container of the filtered paraffin was .003 grams in one case and .0016 grams in the other."

698 The Master: Q. How did you get the top off of the container in these experiments?

A. At that time the containers were opened at the top. The present day container, you open it up here (indicating).

Q. The only reason I asked was that I thought possibly in this present type of container, in order to get it open at the top, the cutting or tearing of the top would necessarily release some pieces of the paraffin.

A. I think it is more likely, Master, in the old method of opening, because you have got more breakability, you see (indicating).

The Master: Go ahead.

Mr. Rall: Q. Your opinion is that there would be less likelihood of paraffin breaking off from the roof, so to speak, with this present type of opening on the side?

A. That is right.

Q. Than at the time you used to take the staple out and open it up?

A. That is right.

Q. The tests you made were by opening the staple?

A. That is right.

And then by opening the paper?

699 A. Yes, sir.

Mr. Gariepy: Q. Do these paper containers show the presence of any gas producing bacteria?

The Master: The question is pretty broad. Do you mean the empty containers?

Mr. Gariepy: Q. That is right.

A. I never found any.

Q. Is that an advantage or a disadvantage to health authorities in safeguarding the public health?

A. It would be considered an advantage from a sanitary point of view.

Mr. Schaefer: Q. Is that your work, Doctor, that you just referred to?

A. Yes. Which do you mean?

Q. This gas-producing bacteria?

A. "We."

Mr. Gariepy: Q. Is the type of bacteria that you found in these paper containers of any sanitary significance?

A. I would say not, because they have been mostly spore forming.

Q. Do you know what temperature the paraffin is heated to and then applied to the bottle and the blank is inserted in, before it is filled with milk?

A. Do you mean at the Dean Plant?

700 Q. Yes.

A. At the time I tested the Dean—you don't call it "Dean," do you?

Q. Dean or Fieldcrest Dairies?

A. At the time I tested the Fieldcrest Dairies, the temperature of the paraffin application was 170 degrees.

Q. What effect has this temperature on the matter of reduction or destruction of micro-organisms or bacteria which may be there present?

A. It tends to reduce it.

Q. What has been your experience with regard to showing bacteria surviving the conditions existing on the modern paper bottling machine?

A. What is the question again, please?

Q. What has been your experience with regard to showing the bacteria surviving the conditions existing on the Ex-Cell-O Machine, the machine that fills the Pure-Pak Container with milk? What did you find concerning bacteria existing there?

A. In the machine itself?

Q. Yes.

A. We checked the machine we had in our own laboratory from the standpoint of following the milk, in one case regular milk, and in one case sterile milk, from the time the milk left the cooler until it was placed into the

701 container, and amount of pick-up in the bacterial con-

tent of that milk was no more than you would ordinarily expect to get in any milk bottling, filling operation.

Q. Have you observed the sterility of the paraffin bath on this machine that fills the Pure-Pak Container?

A. That is right.

Q. What were you results and what did you observe?

A. We found no bacteria.

Q. Have you performed certain experiments with regard to containers housing cottage cheese and butter as commercially sold in stores in the City of Chicago or in your city, Urbana?

A. I have not.

Q. Have you checked those with regard to paraffin?

A. I have not.

Q. Have you an opinion from your experiments and from your research work, Doctor, now, as to whether this Pure-Pak Container is a sanitary sterile milk container?

A. I consider the Pure-Pak Container a sanitary container. I wouldn't consider it was sterile, if you put the proper interpr tion on the word "sterile."

Q. Sterile, as used in the dairy industry, in the matter of paper containers or any containers for milk?

702 A. Sterile as complying with the standard requirements of not more than one bacteria per c. c. of capacity.

Q. Yes.

A. I would so consider it.

Q. Is the bacteria in the amount you found on these various tests of any health significance, Doctor?

A. I would say not.

Mr. Rall: Q. You have referred to certain tests being made on an Ex-Cell-O or Pure-Pak Machine in the University Dairy or the University Creamery?

A. Yes, sir.

Q. Is this a picture of that machine?

A. That is the machine.

Mr. Rall: Without offering this, may it be agreed that the machine to which the witness referred is the typical machine shown in the picture, plaintiff's exhibit 15-A?

Mr. Schaefer: Yes.

Mr. Rall: You may cross examine.

The Master: We will take a recess for a couple of minutes, here.

(Recess.)

The Master: Cross examine.

703 *Cross-Examination by Mr. Schaefer.*

Q. During the course of the morning you testified to bacterial counts which you made on unparaffined paper containers, 128 of them.

A. Yes.

Q. You testified later in the day concerning some tests that you made with respect to glass bottles.

A. Yes.

Q. 161 or 162 of them.

A. Yes.

Q. Was the same technique used in both of those tests?

A. Standard rinse tests.

Q. I notice you reported on one test in the number of colonies?

A. Yes, sir.

Q. And the other in hundreds?

A. That's right. It is just a difference in the way it is recorded. In one case I was quoting you from a publication, or, rather, a manuscript ready for publication, and the other data was taken off of the laboratory records.

Q. That is, to say, your statement as to the result of the tests on unparaffined paper containers should, in each case, be multiplied by one hundred?

704 A. That is right.

Q. Is that right, Doctor?

A. Yes, that is right.

The Master: Q. In each case, or in one case?

A. In each case.

Mr. Schaefer: Q. In the case of each container it should be multiplied by one hundred?

A. Where there is one colony on the plate, you multiply that by one hundred to get the number per bottle.

Q. In this last container you described, where there were 17 colonies on one plate and 19 colonies on another, you multiply each of those by one hundred and you would have 1700 on one plate and 1900 on another?

A. Yes.

The Master: How many are in a colony, a hundred?

Mr. Schaefer: Q. Will you explain to the Master why that is?

The Master: Why do you multiply it?

A. You take the hundred c. c. and put it in the bottle, and you take out that one c. c. and plate it out, and whatever you find there you will have to multiply it out.

Mr. Schaefer: Q. Is the same thing true of the
705 tests you reported concerning the bacterial count of paraffined containers?

A. Yes.

Q. You reported those in terms of individual colonies and in the case of each bottle, the figure which you gave on your direct examination should be multiplied by one hundred, in order to be a comparative figure with the glass figure?

A. Yes.

Q. What experience have you had with the business of the manufacture of paper, Doctor?

A. Experience?

Q. Yes.

A. Simply visits to the paper mill.

Q. How many mills have you visited?

A. Three.

Q. Where were they and when?

A. Three mills in connection with this study.

Q. Just what were those mills?

A. Detroit.

Q. What was the name of that one?

A. That is the Detroit Sulphite, isn't it? Detroit Sulphite. Cherry River, and one in New Jersey, the name has left me right now.

Q. What experience have you had with reference to
706 the business of manufacturing paper, prior to your trip to the Cherry River Mill?

A. On the visit to the Detroit Mill, prior to that.

Q. That is, your experience was limited to the visit to Detroit?

A. In this connection, yes, but I visited other mills in connection with the manufacture of butter cartons and other types of containers or various other products.

Q. When did you go to the Cherry River Mill?

A. We wanted to visit as many of these paper mills as we could, reasonably, so as to be able to study from a sanitary point of view paper containers from the beginning of the paper making process.

Q. And the condition of the mill is a significant factor in the sanitary condition of the paper container?

A. That is right.

Q. Why did you sample the water at the Cherry River Plant?

A. Why?

Q. Yes.

A. Because the water, undoubtedly, plays an important part in the manufacture of paper, from a sanitary standpoint of view, because the paper comes in contact with so much water during the process of manufacture.

707 Q. Did you sample the water at the Detroit Mill?

A. Yes.

Q. What did you find there?

A. We found that the water at the Detroit Mill was not as good as the water at the Cherry River Mill.

Q. Can you be more specific as to what you found at the Detroit Mill, Doctor?

A. We found higher counts. We also found some B-coli.

Q. In the water used in the paper mill in Detroit?

A. That is right.

Q. That mill was the mill manufacturing paper for paper milk containers?

A. It was at that time. I don't know what it is doing now.

Q. How was the water at the New Jersey Mill?

A. We didn't make an examination—simply observations.

Q. Why didn't you examine that water, Doctor?

A. Well, we were not equipped to do it. It is too far from home.

Q. Is that significantly further than West Virginia?

A. Yes.

The Master: Q. In the Cherry River case, all you did was take a container back to your laboratory at Urbana, didn't you?

708 A. We took facilities with us for examining it.

Mr. Schaefer: Q. What you mean to say is that you didn't have a container with you when you went to New Jersey?

A. No.

Q. You testified that your analysis of the chlorinated water used at the Cherry River Mills was free of B-coli?

A. Yes.

Q. What did your examination reveal as to the unchlorinated water at that mill?

A. There was some coli present in the water.

Q. How is the chlorine put into the water at the Cherry River Mill?

A. I couldn't tell you.
Q. You don't know, is that what you mean?
A. I don't know.
Q. Have you ever observed the washing of glass milk bottles in the City of Chicago?
A. Yes, sir.
Q. Where?
A. Bowman's, Borden's, Sidney Wanzers, Hunding's, Ogden Dairy.
Q. When, Doctor?
A. I believe that is all.
709 Q. When?
A. When?
Q. Yes.
A. Several times during the period of the last—since I have been acting in the capacity that I am now acting. You see, we make inspection trips to Chicago plants every year with our students.
Q. You testified as to the possibility of milk leaking from glass bottles when the caps were damaged by defective capping?
A. Yes.
Q. There is, of course, the same possibility of leakage when the Pure-Pak Container is defectively operating?
A. Do you mean the container itself?
Q. Yes, I mean the container itself would leak?
A. Oh, yes, we recognize the possibility of leaks in it.
Q. Did you ever have any trouble with leaky containers in Champaign?
A. Yes, we have had trouble.
Q. Of what nature was it, Doctor?
A. We have had some complaints from our consumers, that bottles leaked.
Q. What was the reason for that?
A. The reason for that?
710 Q. What was the reason for the leakage?
Mr. Gariepy: Let's find out which bottle you are referring to, Mr. Schaefer.
The Witness: Paper containers, you have reference to?
Mr. Schaefer: Q. Yes.
A. I think, in most cases, the bottle becomes damaged on the corner, somehow, in the handling of it.
The Master: Q. On one of the edges?

A. That is right, it gets hit suddenly with a sharp blow of some kind which causes a leak.

Q. Of course, in the case of leaks, both with the paper and the glass bottle container, that carries with it the possibility of bacteria getting into the milk through the hole through which it is leaking; isn't that right?

A. Yes, as soon as the bottle is opened in any way, there is the possibility of contamination, regardless of the type of bottle.

Mr. Schaefer: Q. How many kinds of paper containers are there that you know of, Doctor?

A. I couldn't say.

Q. How many do you know of?

A. I have seen pictures of a collection at Geneva and I have seen the collection there. He must have
711 had fifteen or twenty, I guess. There were a good many foreign bottles in the group.

Q. You don't know how many are in commercial operation, do you?

A. The only ones I know besides the three that I have already mentioned that are in commercial operation, are three others.

Q. There may be others?

A. Yes, there may be others.

Q. Of which you don't know?

A. Yes.

Q. With respect to the pouring lip as a possible source of contamination, on what size bottles did you make the tests that you referred to?

A. Quarts, pints and half pints.

Q. Was Dr. Prucha there when those tests were made?

A. Yes, sir, we made them together.

Q. Will you describe the procedure used in making those tests?

A. The bottles were lined up on the table in one laboratory, separate from the room in which we made our plates, and the prodigeousos, this contaminating fluid, was placed in an atomizer.

Q. Who did that, Doctor?

A. We did it together.

Q. You were there at the same time Dr. Prucha was?

712 A. Yes.

Q. Go ahead.

A. I pumped the prodigeousos, contaminating material, on the bottles from this atomizer, I went up and down the row, spreading on the bottles, four times.

Q. Using those size containers?

A. Yes, sir.

Q. Dr. Prucha testified that he never tested the pouring lip of any size other than quarts, and I am just wondering how that discrepancy occurred?

A. That was about two weeks ago.

Q. These are tests run subsequently?

A. Yes.

Q. I see.

Mr. Gariepy: I don't want the record to show that Dr. Prucha has testified.

Mr. Schaefer: "Dr. Prucha stated"—that's right.

Q. Will you give us the results with respect to quarts, pints and half pints, Doctor?

A. I couldn't do it except in a general way, because I don't have the record with me.

Q. Do it the best way you can.

A. As I recall, there was one plate which showed two colonies of prodigeousos in the milk. Of course, after
713 this spraying was done, half of the containers were permitted to dry and half were opened and poured immediately while they still had these beads of contaminating material all over the surface, and there was one plate from one of the containers which was poured from the milk which was removed from the bottle while it was still wet that showed prodigeousos.

Q. How many bottles did you run tests on?

A. I was just trying to think. As I recall, we had a case of it.

Q. How many are in a case?

A. Twelve.

Q. How many?

A. Twelve of the quarts. I can't remember the exact number, but it was around a dozen. Some of the bottles we couldn't use. We lost one or two of them, bringing them down.

Q. What was that?

A. We lost one or two of them, bringing them down, so I couldn't give you the exact number now.

Q. You referred to the expansion of milk in a Pure-Pak Container and in a glass bottle?

A. Yes.

Q. Will the effect of expansion of milk be different in a glass bottle than in a paper container other than the Pure-Pak Container?

714 A. Well, that would depend upon how much space there was above the milk level for expansion of the material in the particular bottle under consideration.

Q. Did you make tests with respect to expansion on any other type of container than the Pure-Pak?

A. One other.

Q. What did that show?

A. That showed practically the same result as with this container.

Q. What was that other container?

A. American Can.

Q. How much space is there at the top of the American Can container?

A. I never measured it.

Q. There is space there?

A. Yes.

Q. You have not performed that experiment with respect to the other container to which you referred?

A. No, sir.

Q. What is an organ oleptic test?

A. An organ oleptic test?

Q. Yes?

A. It is a test by taste.

Q. That is a test simply by human taste?

A. That is right.

Q. Tasting?

715 A. Yes.

Q. Will you describe the procedure for that test?

A. I will have to describe it as I explain it to my students.

Q. Go ahead.

A. I will have to describe it as I explain it to my students, how they should judge milk: Take the milk into the mouth, permit it to warm up, breathe rapidly through the nose, with the mouth still full of milk, then spit out the milk, don't swallow it.

Q. Just when do you taste it, just before you breathe rapidly or not?

A. While you are doing it.

Q. You testified, Doctor, that you had no knowledge

of any pathological disturbances because of the use of paper containers in your dairy at Urbana?

A. That's right.

Q. Did you have any knowledge of any pathological disturbances because of the use of glass milk bottles in your dairy, Doctor?

A. I did not.

Q. You testified also that you had no occasion to trace a disease resulting from the use of paper containers. Have you had occasion to trace disease resulting from the use of glass bottles, Doctor?

716 A. Only in this way, that periodic cases of typhoid fever in the community, the health officials, one of the first things they do is to trace the source of milk supply used in that home.

Q. That is a routine procedure?

A. That is right.

Q. You trace that right back to the farm, don't you, if you can?

A. The source of the disease, yes, if you can. Of course, we don't always do it.

Q. In your test to determine whether or not paraffin gets into the milk in the Pure-Pak paper container, what tests did you make?

A. We filled the containers with water so that the paraffin, in case it was there, it would be more easily seen, and hauled these containers around on the milk delivery wagon, on the milk route, followed the same trip that a regular milk bottle does, and then brought them back and opened them up.

Q. How many bottles were there?

A. Eight in this particular test.

The Master: Q. Did you open them up in exactly the same way that you do the regular milk bottle?

A. The same way, we did, yes, every bottle when filled with milk. At that time they were opening
717 from the top. That was before they developed the side opening.

Q. Instead of filling the bottle with milk, you filled it with water at the dairy?

A. Yes, sir.

Q. And then let it go through the same channel of distribution as the bottle filled with milk?

A. That's right.

Q. Then you opened it up in exactly the same way?

A. That's right.

Q. So that there was no cutting of the top of the paper container?

A. No.

Q. Which might release some particles of paraffin?

A. No.

Mr. Schaefer: Q. How many of those bottles were free of paraffin, of the eight?

A. They all had a small amount of paraffin in them.

Q. Every one of them had some paraffin in them?

A. Yes.

Q. Would the paraffin act the same way if you used milk instead of water?

A. It probably would.

Q. Suppose you used cream?

A. I would expect the same results without regard
718 to what was used, with respect to mechanical breaking off of the paraffin in the container.

Q. Will paraffin act the same way, when it gets into cream, that it reacts in the water?

A. From the standpoint of flowing on the surface?

Q. Yes.

A. I couldn't say. I never tried mixing the two together.

Q. You don't know whether or not paraffin will dissolve in cream?

A. No.

Q. You referred to a test which you performed to determine the pick-up, as you said, of bacteria from the Ex-Cello-O Machine?

A. That's right.

Q. Will you describe that, please, Doctor?

A. Well, there were several tests conducted. The general procedure was to take the count of the milk in the vat, after pasteurization at the cooler, in the receiving tank at the filling machine, the first bottle filled and periodically during the filling process a bottle was pulled out and it was checked for bacteria.

Q. And what did you find? What was the result of those tests?

A. As I explained, I guess, this morning, there
719 was some increase in numbers of bacteria in the milk due to pick-up from the machine as the milk went

through; it was very small and certainly no more than would be expected from the mechanical operation.

Q. Will you tabulate the results of those experiments, Doctor?

A. I think I could.

Q. Do so.

A. Are you ready?

Q. Yes, Doctor.

A. The number of bacteria in the pasteurized milk in the vat, at the start of the bottling process, 250 per c. c.

At the end of the bottling process there was 105.

That is a very low count milk, to begin with. Then the count on the milk, on this same milk, at the time it reached the reservoir or the bottle filling machine, the Pure-Pak, it was 505.

At the middle of the run, 85.

At the end of the run it was 90.

The first bottle filled was 560.

The second bottle filled was 950.

The third bottle filled was 895.

The twenty-fifth bottle filled was 360.

720 The fiftieth bottle filled was 220.

The seventy-fifth bottle filled was 170.

The hundredth bottle was 180.

The hundred and twenty-fifth bottle was 270.

The hundred and fiftieth bottle was 140.

The hundred and seventy-fifth bottle was 160.

The two hundredth bottle was 140.

The two hundred twenty-fifth bottle was 195.

The two hundred fiftieth bottle was 100.

The Master: Q. One hundred what?

A. Bacteria per c. c. of milk.

Q. Why does it go down from the start of the reservoir?

A. That is due to the fact that the first milk from any system is always going to be high, because you can not destroy all of the bacteria that are on that conduit or the machine or whatever your milk comes in contact with as the milk flows through a pipe line from the cooler to the bottle filler and then comes in contact with the receiving tank on the bottle filler. Those surfaces are not sterile.

Q. The impression I got was, we'll say, a quart of milk that had 505 bacteria at the start, that first got into the reservoir and then it decreased by the time it got out of there?

721 A. No.

Q. That is not what you mean?

A. This is the middle of the run, probably half way. Later, another sample was taken with 85. We had washed out the bacteria in the line by that time.

Q. And these varying figures are the milk that are all a part of the one great big batch of milk?

A. Yes.

Q. The various parts of it would give you a little different bacterial count?

A. The first milk, the first two bottles are higher than any others—the first three.

Q. Would you say those were the same ones that represent the start of the reservoir?

A. That's right.

Mr. Schaefer: Q. Not the same bottles, but the same milk?

A. Approximately the same milk. That gives you the picture.

Q. May I see the rest of the table?

A. Yes.

Q. Would you say that, on the average, there was an increase of more than one-hundred per cent in the bacterial content of the milk flowing through the machine?

722 A. There was in this particular milk, because it was very low to begin with.

Q. And in some instances it was more than one hundred per cent, is that right, Doctor?

A. What is that?

Q. Is that right?

A. What is that?

Q. In some instances it was more than one hundred per cent? Is that right?

A. That's right.

The Master: Q. The first milk showed the largest increase, but the latter milk did not show a large increase in bacterial content. Is that correct?

A. That is correct.

Mr. Schaefer: Q. All of it increased. Is that correct?

A. All of the first milk.

Q. All of the milk increased?

A. No. Your 2250th bottle, for example, was a little bit less than the count of the milk in the vat itself.

Q. What about your 90 count, here?

The Master: It would be approximately the same, wouldn't it?

A. You wouldn't split hairs on bacterial counts
723 that low. Your experimental error would take care of differences like that.

Q. That is, to say, the last milk in the vat had a count of 105, and then approximately the same milk at the end of the machine reservoir was about 90, and then the 290th bottle—

A. The 250th bottle.

Q. The 250th bottle was 100?

A. That's right.

Mr. Schaefer: Q. The middle bottle was the 150th bottle. Is that right?

A. The middle bottle?

Q. Yes.

A. About right in here (indicating).

The Master: We will take a short recess.

(Recess.)

Mr. Schaefer: Q. Doctor, what is the source of pick-up bacteria to which you just referred?

A. Do you mean between the pasteurizing vat and the bottle?

Q. Yes.

A. Surface of the cooler, milk pump, sanitary pipe lines and the milk receiving tank on the Pure-Pak Machine and the filling devices.

Q. You mentioned one cause of leaky containers.

A. Yes.

724 Q. What are some of the causes?

A. We occasionally would find containers leaking as they came out of the machine, in most cases they seemed to be around the bottom, this part here (indicating) where the bottle was closed at the bottom.

Q. Can you account for that?

A. I presume it was an imperfect application of adhesive.

Q. Suppose the machine stops in operation with containers in the paraffin bath, what will result from that?

The Master: Will you speak louder? I can not hear you, Mr. Schaefer.

Mr. Schaefer: Q. Suppose the machine stops in operation, with the container in the paraffin bath, will leakage result from that?

A. I couldn't say. We never had that experience.

Q. You never encountered that?

A. No.

Q. Is there a tendency for milk to drop on the outside of the container from the filling process or during the filling process?

A. Yes.

Q. How do you remove that?

A. We remove it with a spray of water.

725 Q. Applied to the outside of the container?

A. That's right, then following that spray of water with a blast of air.

Q. There is, is there not, a tendency for slivers of paraffin to appear in the milk from some containers?

A. That is right.

Q. What is the explanation for that?

A. I presume it is due to uneven application of the paraffin on the inside, causing a little heavier application at one point than at another, and in handling the container that sliver of paraffin was broken and caused to float into the milk.

The Master: Q. How is this bottle filled, through the pouring lip?

A. It is open.

Q. It is open and then stapled?

A. Yes, that's right.

The Master: Go ahead.

Mr. Schaefer: Q. How can you tell whether or not a container is completely filled?

A. Our method was to have a light shining from one side of the container, which would show through the container and we knew to what point the container should be filled to contain a quart, and the operator would check

726 that as he stood in front of the container, he picked them off and put them into the carton, he would make that check up as he lifted them out.

Q. That was your regular practice?

A. That's right.

Q. Did he find containers that were not completely filled?

A. At the end of the run when we ran out of milk in the supply tank, that would be the cause. The operator didn't know that he was out of milk, and the bottles kept coming through.

Q. Is that the only time that you had that experience?

A. That is the only time, yes, sir.

Q. Have you had any problem in connection with the paper cartons in which the Pure-Pak Containers are packed for delivery?

A. Do you mean keeping them fresh and attractive? Is that what you mean, keeping them fresh and attractive?

Q. I asked you if you have had any difficulty, Doctor?

A. That is the only problem we had, is in connection with the number of times we would use those for delivering the milk in them. After they had become soiled they were discarded.

727 Mr. Rall: Are you referring to the corrugated boxes in which the paper milk bottles are placed for delivery?

Mr. Schaefer: Yes.

Mr. Rall: For delivery by the delivery man.

Mr. Schaefer: Yes.

Mr. Rall: Let's keep the record clear.

Mr. Schaefer: Q. Doctor, in your opinion, is there need for a better waterproofing material of paper containers apparent?

A. Yes, I think there is—for better waterproofing material.

Q. Why, Doctor?

A. Because the paraffin is not one hundred per cent perfect, and until we reach the hundred per cent we always have need for something better.

Q. One of the reasons why you need a better method of waterproofing is the tendency of paraffin on the inside of the bottle to chip off?

A. That is right.

Q. And get into the milk?

A. That is one of the reasons.

Q. What are some of the other reasons?

A. Possibly another type of waterproofing material would give greater rigidity to the bottle. Of course
728 that is problematical, but it is possible that it would.

Q. Did you make any tests with respect to the absorption of the Pure-Pak Container, Doctor?

A. Absorption of water, yes.

Q. What was the result of those tests?

A. We found some absorption of moisture from milk, skim milk; the longer the container was held and the higher the temperature at which it was held, the greater was the absorption. The maximum amount of absorption was about 2½ grams in a quart.

Q. Is there a problem in connection with the bulging of side walls of paper containers?

A. To some extent there is a problem in that the housewife naturally would object to a container which is bulged, the milk layer would be dropped in the bottle and she doesn't like that and she doesn't like to handle a bulgy bottle.

Q. Is the amount of paraffin found in the milk related to the question of whether or not the container bulges?

A. I never have checked the correlation between bulging and the amount of paraffin in the milk. I have an opinion on it but I have never checked it.

Q. What is your opinion, Doctor?

729 A. My opinion is that the more bulging there is, there would be less paraffin.

Q. When were you employed by the Ex-Cell-O Corporation?

A. I have never been employed by them.

Q. You have been employed by the Fieldcrest Dairies, Incorporated?

A. What is that?

Q. Have you even been employed by the Fieldcrest Dairies, Incorporated?

A. I have done some special test work for them on one occasion.

Q. When was that?

A. I believe it was early this spring.

Q. What was the nature of the test work that you did?

A. The nature of the work was to work out a method for making sweet and condensed milk for them.

Q. Who paid your expenses to the Cherry River Mill and the other paper mills that you described?

A. The Cherry River people paid our expenses to their plant; the Ex-Cell-O, to Detroit; the American Can, to the New Jersey plant.

Q. Did you receive any compensation in addition to your expenses?

A. No, sir.

730 Q. You received simply your expenses?

A. Yes, just the expenses.

The Master: Q. What was the purpose of your going there?

A. In connection with the study of paper containers, we thought we ought to have a complete picture, starting

with the log, right on through to the finished paper bottle; it gives us a better background to work from.

Mr. Schaefer: Q. Who pays for the work that you and Dr. Prucha are doing at the University of Illinois?

The Master: What work?

Mr. Schaefer: The work to which the witness has testified.

Mr. Gariepy: Research work testified to.

The Witness: It is a project set up on the books, "Study of Paper Containers".

The Master: What?

The Witness: It is part of our experimental work.

Mr. Schaefer: Q. Who pays for it?

A. It is paid for by the taxpayers of Illinois.

Q. And from no other source?

A. No, sir.

The Master: Q. Why should there be so much emphasis placed on paper containers at the University of Illinois?

731 A. Well, any experimenter in any field is anxious to find out all he can about the news that is coming out in his field and that is what prompted us to go into the paper milk containers, in the first place, we saw a new type of container which we knew the industry would be asking us about, and we wouldn't be in position to answer them unless we went into a study of that. That is the same thing that prompts us to go into any study, to get facts, so that we are prepared to take care of our constituency in the State.

Q. Are you a partisan in favor of these paper containers now?

A. Well, I naturally developed considerable interest in the paper containers, having worked with them for two and one-half years, and I have been convinced that they have many advantages.

Mr. Schaefer: Q. Who paid for the Pure-Pak Machine that you use down there?

A. Who paid for the Pure-Pak Machine?

Q. Yes.

A. The Pure-Pak Machine was loaned to us by the Ex-Cell-O Corporation; they paid for the transportation in and out.

Q. Is there any grant to the University of Illinois
732 for work in connection with paper containers?

A. Not a dime.

The Master: Grant by whom?

Mr. Schaefer: I was just going to ask that question, if there was one.

Mr. Gariepy: There isn't any grant.

Mr. Schaefer: I have in mind the Geneva situation.

The Master: Q. Whatever work you are doing out there is done at the expense of the taxpayers, isn't it?

A. That's right.

Q. And there is an appropriation to cover the work?

A. Yes.

Mr. Schaefer: I think the witness and I understand one another.

The Master: Go ahead.

Mr. Schaefer: Q. Your expenses here today are being paid by whom?

A. Paid through Mr. Gariepy's office, I presume that is Fieldcrest Dairies.

Q. Who paid your expenses when you sat here and listened to Dr. Rice's testimony?

A. It was being paid for by the Staley Corporation of Decatur.

Q. What is the interest of the Staley Corporation in this litigation?

733 A. They have none whatsoever. I was here in Chicago on another matter and dropped in on this hearing.

Q. And why did you happen to drop in here?

A. I was interested.

Q. Are you receiving any compensation for your testimony here today?

A. None whatsoever, no arrangements have been made whatsoever for compensation.

Q. Do you expect to receive any compensation?

A. I expect to get my expenses.

Q. Do you expect to receive anything in addition to your expenses?

A. I think it is customary to pay a fee for testifying for a court of this type.

Q. Then, you do expect to receive compensation?

A. I do.

Q. How much do you expect to charge, Doctor?

A. I have not been able to find out what the customary charge is, as yet, so I can not tell you.

Q. You have no idea?

A. The last case I testified on I charged one hundred dollars.

Q. Do you expect to make the same type of charge here?

A. It won't be any more than that. It might be in
734 that neighborhood.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. Doctor, you were in my office last Friday?

A. Yes.

Q. You were in the city and I heard that you were in the city and I asked you to come over to my office and you came over to my office, at my request?

A. Yes, sir.

Q. You came here to testify at my request?

A. Yes, sir.

Q. With regard to the matter of the table of the bacteria count shown by your experiment, as the milk went from the vat, and tank, through and was filled, do you know what the permitted requirement or the permitted schedule is for the number of bacteria alllowed in the City of Chicago, in the vat of unpasteurized milk per cubic centimeter?

A. I believe it is 200,000 in the raw milk.

Q. If there had been 250,000 in the vat that you performed these tests on, what would your schedule have shown here with regard to being an increase of one hundred per cent or more?

A. After the pasteurization of this milk, of 200,000, the count would have been reduced to 30,000 or less
735 in order to comply with requirements, and the bacterial pick-up would have resulted from passing that milk through this same system, assuming it is the same as we found here, seven or eight hundred; that would mean a very slight percentage increase in number over the original milk.

Q. Would this hundred per cent be negative, or negligible, under those circumstances, taking the 30,000 limit here of the City of Chicago?

A. It would have been between two and three per cent.

Q. Do you know the methods employed at the Fieldcrest Dairies and in the matter of caring for the machine and so on, after each filling?

A. I have never been there when the machine was washed.

Q. What methods did you employ at Urbana?

A. We used the same procedure as we use on our regular milk bottle machine.

Q. What is that?

A. Rinsing with cold water, washing with a hot alkali water and sterilizing with a chlorine solution.

Q. Is the pick-up any more on this machine than on the machine filling glass bottles?

A. No, sir.

736 Q. Do you know of any other or better method for cleansing the machine after this filling operation other than this rinse you have just described, the cold water and the hot alkali?

A. I don't know of any better method, or we would be using it.

Q. Is the Ex-Cell-O on which you performed these various tests with the paper bottle so constructed that it can be readily cleaned with regard to its measuring, this device on the quart and pint measuring, is that an automatic machine in that respect?

A. Yes.

Q. Is the device used on the glass bottle filler an automatic device?

A. It is.

Q. They are both automatic?

A. That's right.

Q. When anything happens to the machine that is irregular, during the filling process, what happens then, when something gets out of kilter while the machine is filling a quart or a pint bottle of milk?

A. We have never had that experience.

Q. Do you know what happens to the machine from a construction basis?

A. It stops immediately, that is, the Pure-Pak Machine.

737 Q. That is the Ex-Cell-O Machine filling the Pure-Pak Container?

A. That is right.

Q. Mr. Schaefer asked you concerning paraffin chipping and you mentioned about slivers chipping off.

A. Yes.

Q. Is there any health problem there?

A. I would not so consider it.

Q. Is there any health problem presented concerning this matter of bulging about which he asked you?

A. About bulging?

Q. Yes.

A. No, sir.

Q. With regard to the reaction upon inquiry you made by circularizing a questionnaire to the consumers; what per cent of the consumer reply was favorable to the use of the paper?

A. Ninety-one per cent.

Mr. Schaefer: That is objected to.

Mr. Gariepy: You asked about it.

Mr. Schaefer: It was ruled on, upon an objection this morning.

The Master: I sustain the objection.

Mr. Schaefer: Was there an answer to the question?

738 (Discussion off the record.)

Mr. Schaefer: Read the answer.

(Answer read by the Reporter.)

Mr. Schaefer: I move to strike the answer.

Mr. Gariepy: He asked him about the cream line this morning and the transparency of the milk in the paper container as compared to the glass, and the witness answered where the cream line was and what was the effect of it and why it was there.

The Master: I sustain the objection to it at this time.

Mr. Schaefer: I move to strike the answer.

Mr. Gariepy: Let the record show that I propose to prove by this witness, if allowed to answer the questions, that after using the paper containers for sixteen months in Urbana and Champaign, at the University Creamery, and after presenting a questionnaire to the consumers, that 91 per cent replied favorably to the questionnaire.

Q. Both glass and paper were being used there in your dairy?

A. Not with it.

Q. Glass milk containers were used at different times, with paper containers?

A. Not with it, but alternating.

739 Q. These inquiries were presented after various uses of each?

A. That is right.

Q. You testified you did not consider the paraffining

process one hundred per cent perfect. Do you consider the sterilization process in the glass bottle one hundred per cent perfect?

A. No, sir.

Q. Does that paraffining process also apply with regard to containers housing cottage cheese and butter, is that paraffining process one hundred per cent perfect?

A. No, sir.

Q. Now, with regard to waterproofing, do you think there is room for improvement of that thermoplastic material used?

A. That has not been proven. They are working on that, now.

Q. What is one objection to that, in the use of the paper milk bottle?

Mr. Schaefer: I object.

Mr. Gariepy: You went into it.

The Master: I will let him answer.

Mr. Schaefer: I object to it.

Mr. Gariepy: Well, you went into it.

740 The Master: Go ahead. I have ruled. Let's have no colloquy.

The Witness: Will you re-state the question?

Mr. Gariepy: Q. What are the objections to the thermoplastic coating other than this paraffining?

A. I don't think I can answer the question.

Q. I am referring to that type that is put on bottles of medicine, which is transparent, hard, heavy material, that you can see the cork through, and it is glued, sort of stuck on.

A. I don't think I can answer that.

Q. Do you consider this absorption that Mr. Schaefer asked you about as presenting any health hazard?

A. None whatsoever.

The Master: If there is absorption, with a two way channel there, if there are any germs in the paper they are likely to go through?

A. There is a possibility that they would, but our work does not show that there is any bacteria in the container itself.

Mr. Gariepy: Q. That is in the paper board?

A. Yes.

Q. What about in the filling process, is there leaking in

the filling of the glass bottle, in the ordinary dairy, where they use glass milk bottles?

741 A. The bottles often break in the filling process and some of them, of course, are chipped around the neck, which permits leaking later on.

Q. Is there leaking when the stopper is put on by this automatic machine?

A. Yes.

Q. Is there any source of contamination in the Ex-Cell-O Machine itself, contaminating to the paper board or the paraffin or the milk?

A. None.

The Master: What do you mean, the filling machine?

Mr. Gariepy: The machine that is used to fill the Pure-Pak Container.

The Witness: None other than the slight pick-up I have already discussed, that is in the pipe lines and in the tank.

Mr. Gariepy: You may cross examine. That is all.

The Master: Q. About the absorption you are talking about, just carrying that a little bit further, if the absorption exists to such an extent that it shows itself in beads outside of the container, then if there are any germs on the outside they might go back into the container, wouldn't they?

A. I can best answer that by telling you of an ex-
742 periment in which we took the container, as filled with milk, and submerged them in prodigeousos for forty-eight hours and washed them off on the outside and opened them up and found no prodigeousos in the milk.

Mr. Gariepy: Q. Which proves what, concerning absorption?

A. That there is nothing passing from the outside through the wall into the milk.

Mr. Gariepy: That is all, Master.

Mr. Schaefer: Q. You said there were no bacteria found in any of the containers. You didn't mean that, did you?

A. What is that?

Q. You said you found no bacteria in any of the containers.

A. Any of the containers?

Q. I think it was said inadvertently, you said that.

A. Just now, do you mean?

Q. Yes.

A. Speaking of this prodigeousos?

Q. I don't mean just now, I mean in answer to Mr. Gariepy's inquiries.

A. May be so.

Q. You have found bacteria in the paper containers?

743 A. Yes, I have found a few.

Q. You did work jointly with Dr. Prucha?

A. Yes, sir.

Q. What was the dividing line between the work done by you and the work done by Dr. Prucha?

A. I assisted him on some of the bacteriological work which I have already referred to. Some of these physical tests he did not assist me any at all.

Q. The consumer reaction?

A. He didn't work on that.

Q. He was not interested in that?

A. No, sir.

Q. You did that?

A. Excuse me—the ones I referred to—he studied some consumer reaction in Detroit on his own hook.

Q. Are you a bacteriologist?

A. I have had training in bacteriology, but my title is "Dairy Manufacturist". Dr. Prucha is our bacteriologist.

Q. In general, Dr. Prucha did the bacteriological work?

A. He is the senior there on this treatise which we are preparing.

Q. You were primarily interested in the consumer reaction?

744 A. My main responsibility was in physical tests and in the consumer tests. I was interested in the whole proposition.

Mr. Schaefer: That's all the questions I have, Doctor.

Mr. Gariepy: No further questions.

The Master: That is all, Doctor.

(Witness excused.)

(Discussion off the record, in reference to some gallon glass jugs.)

Mr. Rall: An inquiry develops, that there is no assurance that these large gallon containers do come from within the limits of the City of Chicago.

(Thereupon, the further hearing in the within cause was continued by the Master without specific date.)

745 • • (Caption) • •

Wednesday, September 6, 1939,
10:30 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

746 The Master: When you are ready, you may proceed.

Mr. Gariepy: The record ought to show that Mr. Harry C. Fisher is being returned to the witness stand on request of counsel for the defendant, for the purpose of further cross examination.

H. C. FISHER, a witness called on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination (Continued) by Mr. Schaefer.

Q. Mr. Fisher, in what form is the paper used in the manufacture of paper blanks received at the Gardner-Richardson plant?

A. Sheets, it is received in the form of sheets. They are piled up on a wooden flat and then banded down with steel bands, with a wooden top over the top of the sheets, and the bands go around the top of the sheets, down the sides and underneath the flat, being criss-crossed, that is, a couple of bands in each direction across the sheet, and lengthwise of the sheet, and underneath, of course, the pile of sheets is protected by wrapping, paper wrapping, around the entire thing.

Q. How large are those sheets?

747 A. The sheets of which the blanks are made vary in size. It would be around 30 inches one way, 24 or 30 inches one way and 50 inches or 40 inches the other way.

Q. And how high are they stacked up?

A. They will be stacked up a distance about, I would say, 3,000 sheets, or about four and a half to five sheets tall.

Q. And how do you receive those? By rail?

A. They come in by rail.

Q. And then you truck them in?

A. Yes, sir. They come off of the railroad box cars and are dragged into the plant on what we term a dolly, which is just a four-wheel device which slips underneath the flat, and the men can pull it into the storeroom.

Q. Now, that paper, after it comes into the plant, is stored until it is ready to be processed by the Gardner-Richardson Company; is that correct?

A. Yes, sir.

Q. Where is it stored?

A. In a warehouse, that is, part of the building in which the conversion occurs.

Q. Will you describe that warehouse, please?

A. The warehouse has a concrete floor. It is a 748 brick, concrete structure throughout.

Q. How large is it in space?

A. There are a number of different rooms. I would say some of them are a hundred feet long and fifty feet wide. Others are various sizes.

Q. What else do you store there?

A. Paper board.

Q. Is that all?

A. That is about all, yes, sir.

Q. Nothing else?

A. Well, there might be some rolls of kraft paper, used for wrapping this, that, or the other, or some twine, or paraffin, something of that nature, but that is about all.

Q. How long are the stacks of paper stored there before they are used?

A. That depends entirely upon the rate at which the orders for the product are coming in. They might be there for weeks, and then again they might be there for a matter of hours or days. It is quite impossible to tell.

Q. Now how long an interval of time elapses between the printing of the container and the gluing of the container?

A. The general procedure followed is to print one day, to cut and score the next day and to glue the third day.

Immediately following the gluing operation the blanks 749 are packed and held for shipment to the customer.

Q. Where do they go after printing?

A. After printing they are just transferred from one press to another, which is from one room to another, so to speak, in the same building.

Q. They remain there until they are ready to be scored?
A. Yes, sir.
Q. Where are they kept during the interval between scoring and gluing?
A. They are kept at that time usually right in the same room in which the scoring occurs or they are parted simply by a door into the adjacent room, where the gluing occurs.
Q. Now, will you describe the room where the printing and scoring occurs?
A. That is much the same as the warehouse. It is a large concrete brick building, with the usual steel type windows in the walls; an enormously big thing.
Q. Of what material are the walls made?
A. I think they are brick. I never paid much attention to that.
Q. Now, will you describe the operation of the printing press?
A. In the printing press the type used for these Pure-Pak blanks, the machine comprises a movable bed or
750 flat bed, so called, upon which the printing form or type is mounted, on a horizontal plane. On one end of that movable bed is the equipment, comprising rolls, a smoothing plate and so on, on which the ink is deposited and rolled out, and after the ink is rolled out one of these ink applying rolls then transfers the printing ink to the surface of the printing plates; simultaneously, the mechanical equipment feeds the sheet into the end of the printing press, where it is grabbed by fingers, and it revolves the printing roll, which is some three or four feet in diameter, and it is timed to bring the sheet into contact with the printing plates, as the two come together, and then a mechanical device takes the sheet which has been printed, with the printed side up, and brings it to the opposite end of the printing machine, where the sheets pile up one on another.
The Master: Off the record, please.
(Discussion had off the record.)
Mr. Schaefer: Q. How are the sheets fed into the press, Mr. Fisher?
A. The sheets are fed into the press mechanically, by devices, comprising a blast of air, which impinges upon the outside edge of the pile of sheets and separates one from another, and then mechanical fingers move in and
751 actually grab hold of the end of the sheet and pull it into the mechanism which feeds it further into the press itself.

Q. When the sheets come to the end of the printing press and come off of the press, what happens to them then?

A. At the end of the press the sheets fall one upon another, and gradually build up into a pile. Simultaneously, the pile keeps sinking down, through mechanical means, so that the top portion of the pile is always of the same height.

Q. Then what happens?

A. That completes the printing process.

Q. Then what happens to the sheets?

A. Following that, they are taken in charge by crews of men, who lift off a large part of the sheets on to—pardon me, I am getting ahead of myself.

At that stage of the game, after the sheets have piled up to the required height that the equipment allows them to be handled, they are taken off of the press, that is, the flat upon which they pile is moved over by means of another dolly to a different flat, so that the wooden thing upon which the sheets pile up can be inserted and the pile of sheets thus printed is held for running through the 752 cutting and creasing press.

Q. How high do these piles run?

A. Those piles would be about two feet or three feet. They vary somewhat, as a matter of convenience.

Q. Now, with respect to the printing room, where are the washing and toilet facilities?

A. There is a main room for that, which is some 150 or 200 feet away.

Q. It is on the same floor, is it?

A. Yes, sir.

Q. There is just one lavatory in the plant?

A. They are scattered all over the place. There are many of them.

Q. But that is the one used by those men?

A. Sir?

Q. The one used by those men is in the location you describe?

A. Yes, sir.

Q. What other operations are carried on over in the room where the sheets are printed and scored?

A. No other operations are carried on there. The scoring, of course, is done in a second room, which is adjacent to the first one I just mentioned, and in that room there is a certain amount of gluing equipment for different kinds of cartons. There is also some paraffining equipment used

for an entirely different kind of carton, but that is a
753 good many feet away.

Q. These particular containers are glued in a separate room from the room in which they are printed?

A. Yes, sir.

Q. Is the machine used for gluing these blanks used for any other purpose?

A. No, sir.

Q. On your direct examination you testified as to certain laboratory tests or the results of those tests. Were those tests run on the paper before it was printed, scored and glued, or afterwards?

A. We do both. We run the test—

Q. I am interested in the ones you testified to on your direct examination.

A. Those tests were run on the board itself.

Q. As received by you?

A. Yes.

Q. You did not testify to any tests as to the printed, glued blank, did you?

A. I don't recall that I did, but that is a test that we do carry out.

Q. How many tests do you run on the finished blanks?

A. Our rule is to run daily one test on each kind of finished blank.

Q. What do you mean by each kind?

A. We have a number of different customers. Each has different sizes and kinds of containers. So it would
754 be one of each kind for each customer.

Q. You do not mean you run one quart blank and one pint blank.

A. Something of that nature, yes.

Q. Or do you mean you would run each customer's blanks?

A. We strive to run one quart—let me explain it this way: If a customer is getting some quarts and pints used for different purposes, we will run one of each, so far as possible.

Q. What is your rule with respect to tests on the paper coming into the plant?

A. One sheet to a load.

Q. For what kind of a load?

A. That is a load that will have about 2,000 or 2,500 pounds on it.

The Master: Q. One sheet is all you will test?

A. Yes.

Q. What do you test it for?

A. Bacteriological test, physical test, strength, and things like that.

Q. What else?

A. Things like that, I said, stuff like that.

Mr. Schaefer: Physical strength, I think, is the phrase you did not catch.

The Master: Q. All you do is simply print and score and glue, isn't that right?

A. We make paper, too, incidentally, but I am not
755 speaking of that.

Q. I would like to find out what is your interest in the bacterial content of the paper?

A. We want to be certain that we are not going to print any paper that is not right.

Q. One sheet out of about how many sheets would you say you make the test on?

A. Two thousand to three thousand.

Mr. Schaefer: Two thousand to three thousand pounds you said, Mr. Fisher.

The Witness: It happens that a sheet weighs about a pound, too.

Mr. Schaefer: I see.

The Witness: Now, it is correct to do such a thing—

Mr. Schaefer: Just one minute. Do you mean a sheet of the size you described, of this paper, weighs a pound?

The Witness: Yes, sir, approximately a pound, yes.

The Master: Q. What kind of a container? A quart container?

A. No, sir, that is the sheet before printing.

Mr. Schaefer: A sheet 30 by 50 inches, the witness testifies weighs about a pound.

The Master: Q. You sell the containers, don't you?

A. Yes, sir.

756 Q. All you do is buy the paper board from someone else and then you go ahead and sell the containers?

A. We have made this kind of paper, too, but generally we buy it and then print it and cut it and score it.

Q. But your primary business is merely to sell the containers to the milk companies, is that right?

A. In this instance, yes.

Q. What?

A. In this instance, yes, but we are also paper manufacturers.

Q. Does most of your business with reference to these containers for milk consist of buying a paper ready made and simply making the paper up into containers, or does most of your business consist of making the paper also?

A. Up to the time I testified before, we had always bought the paper. Now we are doing some of the manufacturing of the paper, too.

Q. But most of it is still merely preparing the paper, that is, putting it together and printing it after you have bought it from someone else?

A. Yes, sir.

Mr. Schaefer: Q. Are you manufacturing any of the paper used in the containers at issue in this case?

A. We are now, yes.

Q. When did you begin doing that?

757 A. A few weeks ago.

The Master: Q. Is there any reason for starting that practice?

A. Yes, there is a reason. Of course, the economics of the thing would change as time passes, and also it gives us an excellent control of the whole process from beginning to end. Paper making, of course, is a continuous thing, involving the handling of tons and tons of material at a time. By doing that in one of our departments and knowing exactly what goes on there, it insures what is happening with the finished stock as we receive it for converting, it being still more under our own control.

Q. The paper manufacturing operations are carried on in the same building?

A. It is in an adjacent building, right across the railroad track, I would say a distance of about a hundred feet or so.

Q. Up to the time of a few weeks ago when you began making paper board for these paper containers, had you made paper board for paper milk containers before?

A. We had made a number of experimental runs, but nothing in production.

Q. Nothing for commercial use?

A. No, sir.

Q. And the factors that induced you to make that

758 shift were largely economic factors?

A. I would say so, yes, sir.

Q. Did that involve extensive changes in your paper manufacturing plant?

Mr. Gariepy: I am going to object to that, Master. I

cannot see where that has any bearing whatsoever on the issues of this case, whether they had changes in the economic situation or the finances?

Mr. Schaefer: Here is the answer right here. When Sanborn was testifying—I read his testimony last night—there was an effort made to restrict me on my cross-examination of Sanborn to the Cherry River Paper, on the ground that that was where the paper involved in this suit was manufactured, and I contended, and you sustained me at that time, that economic factors would determine whether or not a mill would manufacture this type of paper or some other type of paper. That is borne out right now.

The Master: I don't know just what you mean.

Mr. Schaefer: I mean this: I cross-examined Sanborn as to whether or not a mill could shift the production of paper to some other type of product, to prepare for paper milk containers. Counsel for the plaintiff objected, on the ground that I should be restricted on cross-examination
759 to the conditions of the Cherry River paper.

The Master: Off the record.

(Discussion had off the record.)

Mr. Gariepy: Adding to my objection and the cause for my objection, the plaintiff is purchasing paper board or paper containers made from the board of the Cherry River Paper Company only and not from any paper board made by Gardner-Richardson Company at its plant in Middleton, Ohio, and therefore I object to the cross examination concerning the way Mr. Fisher's company is making paper board.

The Master: Now, do you desire to continue with that line of examination, Mr. Fisher.

Mr. Fisher: I don't remember what the pending question was.

The Master: Off the record again, please.

(Further discussion had off the record.)

The Master: Go ahead.

Mr. Schaefer: Let me ask the witness one other question first.

Q. Is any of the paper manufactured by the Gardner-Richardson Company used in the Pure-Pak container sent to the Fieldcrest Dairies?

A. No.

Q. Are you competent from your course with Dr.
760 Sanborn to identify the nature of the bacteria found in the paper?

A. I think my competency for that sort of work is confined to telling how many bacteria are present in the paper.

Q. And the same is true as to the man who actually performs the tests?

A. Well, he is more thoroughly trained in that than I am, because he studied some of it at the school, even though he did not graduate.

Q. You do not know of your own knowledge whether or not he is competent to make an identification of bacteria?

A. As a general thing, no, but in some cases I think he could do it.

Q. How does it happen that you first began to make tests as to the bacterial counts on the paper board in April, 1939?

Mr. Gariepy: I object to that. He has been over that on direct examination when he was here before. He started to tell at that time why they set up their laboratory for making the tests.

The Master: There is no reason why he cannot cross examine him on that.

Mr. Gariepy: He did cross examine him on that. 761 This is repetition.

The Master: You said on direct examination.

Mr. Gariepy: No, I mean on cross examination.

The Master: I will let him answer.

The Witness: A. It so happens we were getting into this type of work more and more, so we decided to set up a laboratory to do that kind of work. By the time the equipment was purchased and received and the routine established, it came to that particular date.

Mr. Schaefer: Q. What is the name of the man who you testified was the company doctor?

A. I don't recall that I testified as to the name of the company doctor.

Q. No, you did not. That is what I am asking you.

A. I don't know what his name is. They have a large number of physicians on call, so that anyone can be obtained at any time by the registered nurse who is there all the time.

Q. In the event of an accident or an emergency?

A. Yes.

Q. He comes to the plant only when he is called there?

A. That is it, yes.

Q. On your direct examination you said that the Gard-

ner-Richardson Company had a completely equipped
762 hospital. Will you describe the equipment in that hospital?

A. Well, it comprises a waiting room, combined office and hospital room, I would term it.

Q. What is in the hospital room?

Mr. Gariepy: I am going to object to that, Master, what is in the hospital room. He can be here all day wasting time and money telling about the things that are in the hospital room, X-ray machines, boiling and sterilizing equipment and all that stuff. What has that got to do with this lawsuit?

The Master: Let him briefly tell.

Mr. Gariepy: Make it brief, Mr. Fisher.

The Witness: A. I would say it has the usual things you see in any first-aid hospital; stretchers, an operating table, heat lamp and couch and things of that kind, a case of medicine, sterilizers and things of that sort. I really have not given much attention to it. That is a function of the medical department.

The Master: Q. How big a room is it, did you say?

A. I would say it is about twenty feet long and ten feet wide. Something of that nature.

Q. It is not really a hospital then; it is simply a room that you use for the doctors?

A. It is more or less a first-aid room, yes.

763 Q. Is a doctor regularly in attendance there?

A. As he is called, yes.

Q. As he is called?

A. Yes.

Q. That is the question I asked you. Is he regularly in attendance there all day long?

A. No, sir.

Mr. Gariepy: Mr. Fisher, just answer the questions as briefly as you can.

Mr. Schaefer: That is all, Mr. Fisher.

Redirect Examination by Mr. Gariepy.

Q. Mr. Fisher, you were asked on direct examination on July 5, 1939, when you were here before, concerning the matter of ink penetrating into the paper board. Have you performed any tests since July 5, 1939, concerning the penetration of ink in this board?

A. Yes, sir.

Q. First let me ask from whom do you buy the inks that are used on the plaintiff's containers here, in the various colors that are used, for the quart milk bottles, cream bottles and so on?

A. The Hilton-Davis Chemical Company.

Q. Do you buy ink from any other place?

A. Sir?

764 Q. Do you buy ink used in the plaintiff's containers from any other source?

A. No, sir.

Q. What was the test that you performed concerning the finding out or ascertaining of the amount of penetration of ink into the paper board?

A. The test can be divided into three parts. In the one instance the printed container is torn in such a manner that the tear is on the bias through the thickness of the sheet, and then by visual examination it can be seen that the ink is confined to the upper portion of the sheet.

The second type of test comprises taking a piece of the printed board and compressing it between the hands until the various plies separate one from another, in which case each separate ply is examined visually to see whether ink has penetrated. In other words, if it is a red ink you can see red down through the sheet, if it has penetrated. Then a more elaborate test comprises taking the printed top portion of the sheet, which is stripped off, putting it into a test tube, with a quantity of glacial acetic acid and heating that. The glacial acetic acid acts as a solvent to dissolve the vehicle of the ink. It releases the pigment which colors the glacial acetic acid. Then

765 by taking portions of the sheet of board throughout the sheet and performing this same test with glacial acetic acid, no characteristic coloring is obtained, which is an indication, of course, that there has been no penetration of ink below the top surface of the sheet.

Q. Have you ever experienced any chipping off of the ink on any of the paper containers printed here for the plaintiff?

A. No, sir.

Q. Have you ever had any complaints concerning ink chipping off, on any of the colors, red, green or yellow, used on the plaintiff's containers?

A. No, sir.

Mr. Gariepy: That is all, Mr. Fisher.

Mr. Schaefer: Just a moment.
The Master: Are you through?
Mr. Schaefer: No, I am not. I want to go ahead.
The Master: Proceed.

Recross Examination by Mr. Schaefer.

Q. Do you buy ink from anyone other than the Hilton-Davis Company, Mr. Fisher?
A. For the Pure-Pak containers, no.
766 Q. Do you manufacture any other milk containers there.
A. Yes, sir.
Q. Do you buy the ink for those containers from the Hilton-Davis people?
A. Yes, sir.
Q. Do you buy all of your ink used for printing milk containers from the Hilton-Davis Company?
A. Yes.
Q. These tests that you described, each of them is effective to determine whether or not the pigment, that is, the coloring matter in the ink, has penetrated into the paper, and how far it has penetrated, is that correct?
A. Will you please read that question again?
(Mr. Schaefer's last question was read by the reporter as above recorded.)
A. Yes.
Mr. Schaefer: Q. Now, will you explain how those tests indicate the extent to which the vehicle in which the pigment is suspended has penetrated into the paper.
A. If the vehicle has penetrated into the paper, since it has a dark brown color, it can be seen.
Q. The vehicle itself has a dark brown color?
A. And I have known of an instance of printing ink of the type used on paper board in general or on
767 paper milk container board in particular where the pigment will separate itself from the vehicle to such an extent that the vehicle would appear in the sheet, without the pigment going along with it. Such penetration as does occur is confined to a matter of a thousandth of an inch or perhaps two thousandths of an inch, which is much less than the thickness of one of the plies of paper that is formed up in making the complete sheet.
Q. Of what is the vehicle composed?

A. It is largely linseed oil, varnish, so-called.
Q. And drier?
A. And a drier, yes.
Q. What color is the drier?
A. It looks quite like the varnish itself. It may be a little darker.
Q. It depends, does it? You use different kinds of driers, I suppose, in different colored inks or different types of ink?
A. Yes, sir.
Q. Those tests that you described, however, are all limited to detection by visual means of the extent to which the ink or any of the component parts of the ink have penetrated into the paper?
A. I would not say that. The first two are, but the third test is one based upon releasing the pigment from the vehicle.
768 Q. But still in order to determine whether or not there has been pigment there to be released, you would still rely upon a visual examination for the coloring of your sheet?
A. Yes, sir.
Mr. Schaefer: That is all.
Mr. Gariepy: That is all.
(Witness excused.)
Mr. Gariepy: Mr. Taylor.

CLINTON L. TAYLOR was called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. What is your name?
A. Clinton L. Taylor.
Q. And your address?
A. 6199 Cambridge Avenue, Cincinnati, Ohio.
Q. What is your business or occupation?
A. Chemist for the Hilton-Davis Company.
Q. What schools did you attend and study at in order to become a chemist?
A. A general high school course and the University of Cincinnati.

769 Q. How long have you been connected with the Hilton-Davis Company of Cincinnati as a chemist?

A. Since 1926.

Q. What are your duties there?

A. My duties are to supervise analytical work and carry on research work.

Q. Have they a laboratory for the purpose of performing research work?

A. They do.

Q. What does the Hilton-Davis Chemical Company manufacture?

A. They have ten departments. They manufacture printing inks, dyes, pigments, varnishes, esters, alcohols, sizing. That is practically all.

Q. Does the Hilton-Davis Company sell ink to the Gardner-Richardson Company?

A. We do.

Q. How long have you been doing that?

A. I will have to make an approximation. I will say since 1930, to my knowledge.

Q. Are you acquainted with the chemical constituents of the ink that is used in the printing of the legend on the Pure-Pak containers of the plaintiff, Fieldcrest Dairies, here?

A. I am.

Q. Are you acquainted with the formulas that are
770 used in the preparation of said ink?

A. I am.

Mr. Gariepy: Mr. Schaefer, to save time might we not agree that the formulas I gave you some time ago are the true and accurate formulas, or do you want this man to go into detail as to them?

Mr. Schaefer: No. However, you haven't gotten them in the record yet, if you want them in.

The Master: Off the record.

(Discussion had off the record.)

Mr. Gariepy: Mr. Reporter, will you mark this document Plaintiff's Exhibit 45 for identification.

(The document referred to, containing formulas for the preparation of ink manufactured by the Hilton-Davis Chemical Company for the Gardner-Richardson Company, was thereupon marked Plaintiff's Exhibit 45 for identification.)

Mr. Gariepy: It is agreed by and between counsel that

for Plaintiff's Exhibit 45 will be substituted a list containing the same constituents with regard to the formulas here in question. This is offered for the purpose of showing the formulas used in the preparation of the ink used on the Fieldcrest Dairies containers in question here.

Q. Mr. Taylor, have you performed a test during
771 the month of June, 1939, with regard to the amount of ink, if any, that is absorbed from a Pure-Pak container, unparaffined, placed in a quart bottle or gallon bottle of milk?

A. I did.

Q. Will you describe to the Master what you did in performing that test and what the result was?

A. We received the standard cartons containing the ink in question, the Dean green ink.

Q. Is that the same Dean green ink referred to in Exhibit 45?

A. Yes, that is the same Dean green ink referred to there.

The Master: Q. These are containers received from whom?

A. These are containers received from the Gardner-Richardson Company, unlabelled, and brought over to me to be tested, to see what effect and how much if any ink might be absorbed by the milk. To make the test very severe we took the carton which had the most ink—

Mr. Gariepy: Q. Did you do this yourself, Mr. Taylor?

A. Yes, sir.

Q. Go ahead.

772 A. To make sure that the test was carefully carried out, I had an assistant to check all weights. We took the green carton, which has the most ink and the highest percentage of metal in the printing ink, and cut that carton into small pieces, put that carton down into fresh ink, and also took—

Mr. Schaefer: Fresh what?

The Witness: Fresh milk. I beg your pardon.

A. (Continuing.) —and put that in the ice-house for 24 hours, and along with it a bresh bottle of milk, a blank, of course. Then that was brought into the lab and a sample taken out and the bottle put back for 24 hours more, and then it was brought in, and that was a 48-hour sample. Then the bottle was put back and brought back 24 hours

later for a 72-hour sample. That gave us three samples, a 24-hour, a 48-hour and a 72-hour sample.

Now, 100 cc. of each one of those samples, which is approximately three ounces, was drawn from the blank, from the 24, from the 48 and from the 72, giving us four tests to be run.

Now, these tests are run according to the Official Association of Official Agricultural Chemists, which is a standard among all approved chemists.

773 We evaporated this milk to dryness; then put the evaporating dishes into a furnace and burned them down at a high heat, to burn out all carbon.

Now we have the sample in the condition of an ash. Then we added 15 cc. of hydrochloric acid, to redissolve any lead which might have been absorbed by the milk.

This acid, containing all soluble salts, was then treated with ammonium acetate, acetic acid—I don't have to go all over that, do I?

Mr. Gariepy: Q. Go ahead.

The Master: Tell us what you did.

A. : And sodium hydroxide and copper sulphite; and then filtered. Then we take the samples and test them for lead, with a very sensitive indicator, namely, diphenylcarbazole. This is the most sensitive color indicator for lead.

Now, we have the four samples with the indicator in them. To tell whether there is any lead in there or not, we make up standard solutions containing known amounts of lead and add the same indicators to these standard solutions and compare these standards with our four samples.

The results of our tests showed there was no lead 774 absorbed by the milk from the ink after 24, 48 or 72 hours.

Mr. Gariepy: Q. Were these cartons paraffined?

A. No, these cartons were not paraffined. The condition was the worst condition we could possibly have.

Q. Have you had occasion since performing that test, Mr. Taylor, to perform tests with regard to the lead content in milk bottle caps?

A. I have.

Q. Which I sent to you from the City of Chicago, from Westbrook Farms Dairy, Inc., 923 North Wolcott Avenue, Chicago?

A. I have.

Q. And how many of those caps did you receive on September 1, 1939, from us and perform comparative tests concerning the lead content in those green caps on?

A. I ashed twelve of those caps.

Q. And what did you find in ashing twelve of those caps, with respect to the lead content?

A. I found these caps contained the same lead pigment as used in that type of green ink.

Q. Have you those caps with you?

A. Yes, sir, I have the remainder of the same caps.

775 Mr. Gariepy: Mr. Schaefer, can it be agreed that this dairy is selling milk and using these caps in the city of Chicago today? I purchased those caps myself out of the dairy and got the buttermilk from the Brevoort Cafeteria or Hotel. If you want to check up with the office or call up there, you may.

Mr. Schaefer: We will agree.

The Master: What was the result of the analysis of these caps?

Mr. Gariepy: Q. Did you give the result, Mr. Taylor?

A. I found that this ink was made with a lead pigment.

The Master: Q. How does that differ from the ink that was used on the Pure-Pak container?

A. There is no difference, except a slight difference in shade. The basic ink is the same.

Q. Was the test that you made on these caps the same test as you made on the Pure-Pak container?

A. No, sir. I tested for lead in the ink in this instance.

Q. You just tried to see if there was any lead in the ink?

A. If that is a lead ink.

776 Q. But you didn't make any test to see if the ink or the lead got into the milk?

A. That is right. I just tested these for lead.

Q. You wanted to see if there was lead there?

A. If that was a lead pigment.

Mr. Gariepy: Q. Do you know whether there is any difference in the quality of the ink used on these Westbrook Farms caps from the ink used on the Pure-Pak container with the Dean green ink, so-called?

A. Those are practically the same inks. We can match them up with our Dean ink and there would hardly be any difference.

Q. Are these green caps paraffined that you made the check on?

A. They are just like that (indicating caps).

Mr. Gariepy: Look at those and see if you cannot agree that they are not paraffined, Mr. Schaefer.

Q. Is this ink used on the Pure-Pak container, called Dean green in Exhibit No. 45 formula, soluble or insoluble?

A. Insoluble.

Q. And why is an insoluble ink used, Mr. Taylor?

A. An insoluble ink is the only type of ink that Gardner-Richardson could print with.

The Master: Q. What do you mean by that?

777 A. What do I mean by insoluble?

Q. No; you say that is the only kind of ink that they could print with. Why couldn't they use soluble ink to print with?

A. Well, Master, that is a question of soluble ink and insoluble ink that means two things. This writing fluid we term a soluble ink. We know that cannot be printed, this writing fluid.

Mr. Gariepy: Q. Such as the court reporter has in his pen?

A. That is right. In the printing trade we call a soluble ink a writing fluid, whereas a printing fluid is similar to a paint; it is insoluble, and because it is insoluble it has the qualities of a paint.

The Master: Q. Then you would say that all ink which is used for printing is an insoluble ink?

A. All ink which is used for printing in the carton business is an insoluble ink, and 90 per cent of all other ink is insoluble.

Q. What do you mean by insoluble?

A. The pigment is insoluble in its vehicle, no matter what the vehicle is, whether the vehicle is water or linseed oil or turpentine; the pigment must be such that it cannot bleed in that vehicle. We call that bleeding. If there
778 is any bleeding we have to throw the pigment out; it is not acceptable.

Q. What do you mean by bleeding?

A. By bleeding, for example, if you should print on this card and this red would bleed off on to the side, we call that bleeding, just like it bleeds into a blotter.

Mr. Gariepy: Take this pen and push it down, and you can see what he means, Master.

The Witness: You see, by pushing that pen, the ink bleeds out.

The Master: Q. You mean, it spreads?

A. It spreads, that is right.

Q. It does not give you a clear-cut impression or line, is that it?

A. It bleeds into the vehicle. When the pigment is stirred into the varnish, the varnish must not dissolve the pigment into itself. If so, then you call it a dye. If it bleeds, then you have a dye; you no longer have a pigment.

Mr. Gariepy: Q. Is this same type of lead pigment ink used on other food cartons and containers?

A. It is the very same ink that is used on practically all food containers or cartons.

Q. Name some of them that you know it is being
779 used on?

A. I have three right here that I picked up, that you all use. There is the same type of ink used on that.

Q. Pointing to three packages of gum, Wrigley's Doublemint gum, all wrapped up, and Spearmint and Juicyfruit?

A. We make that ink on those.

Q. What other food products are sold in containers that use the same ink as is used on the Dean green here?

A. Bread wrappers, oleomargarine cartons, butter cartons, cracker boxes, soaps, soap cartons. I think that covers it pretty well.

Q. By pigment what do you mean, so we understand each other, the pigment in the ink?

A. In the printing and paint trade, by pigment we mean the poison which is insoluble in the vehicle.

Q. That is in the liquid, the varnish and the linseed?

A. The pigment is the material which is insoluble in the vehicle. It is carried in the vehicle. You grind your pigment into your vehicle. Ink consists of two things primarily, the vehicle and the pigment.

The Master: Q. By insoluble, do you mean it will
780 not dissolve?

A. It will not dissolve to any extent.

Q. In that particular vehicle?

A. Yes.

Q. But will it dissolve in some other vehicle?

A. Then it is no longer a pigment. No; it will not dissolve. A good pigment will not dissolve; a first-class accepted pigment will not dissolve in the standard printing ink vehicles.

Q. That is not what I am asking you. Assume that it will not dissolve in the standard printing ink vehicle.

A. Why, yes, you could dissolve it in acid or benzine or gasoline or things like that.

Q. Will it dissolve in milk?

A. No, sir. That is water.

Mr. Schaefer: That is what?

The Witness: That is mainly water, as you know.

Mr. Schaefer: Yes. I didn't hear you.

The Master: Q. This pigment will not dissolve in water?

A. Right. It is precipitated from water.

Q. Will this pigment come out of the ink of which it forms a part when water is applied to the ink?

A. No, sir.

Q. Or when milk is applied to that ink?

781 A. No, sir.

Q. It will stick right with the ink?

A. Yes, sir.

Q. Of which it is a part?

A. Yes, sir.

Mr. Gariepy: Q. Is there such a thing as flexibility in the printing ink itself as used on cartons?

A. All printing inks are flexible, in the carton trade.

Q. And if this ink chipped and fell apart and so on like that, would that ink be suitable for use for printing on food cartons or liquid container cartons at all?

A. The carton would be thrown back to the printer and we would have to make up for the loss. They could not be accepted. They would not go through the folding machines in the first place without knocking the ink off, and that never happens with a good ink.

The Master: Q. What is that?

A. That never happens in good ink. It is merely thrown out. It would never get to the customer.

Q. Does it happen to your ink?

A. No, sir.

Mr. Gariepy: Have you ever had any of your ink chip

so that particles came off in the scoring process or
782 folding process, whatever it may be, in the handling of it from store to store and shelf to shelf, so that you receive the containers back, because the quality of the ink was not flexible enough to resist that force?

A. I have never in the time that I have been in the printing business seen a chipping ink, an ink that would chip.

The Master: Q. In other words, when the ink dries on the paper to which it is affixed or on which it is imprinted, it is not brittle?

A. It is very flexible, rubbery.

Mr. Gariepy: Q. Do the different colors of ink used on the plaintiff's container, red, yellow, pink and so on, differ with regard to lead content?

A. Yes, sir.

Q. Which one has the highest lead content?

A. The greens.

Q. And why is that?

A. Because all greens of this nature are made with lead chromate, contain about 30 per cent lead pigment.

Q. In these tests that you performed on the Westbrook Farms milk caps did you bring with you the results in vials?

A. I did.

Q. And are those the vials before you?

783 A. Yes, sir.

Q. Will you explain to the Master what each one of those vials show, with regard to lead content?

The Master: Of which?

Mr. Gariepy: The green.

The Witness: A. On the green from the Westbrook, I ashed twelve of these tops.

Mr. Gariepy: Q. Westbrook Farms tops?

A. From the Westbrook Farms. I redissolved the lead, then precipitated it with hydrogen sulphide and got a heavy black precipitate, which is the first indication of lead. To recheck this, I redissolved the hydrogen sulphide with hydrochloric acid, neutralized, and reprecipitated the lead with potassium chromate, which is a very sensitive test for lead. The blank vial contains all the reagents.

Q. The vial containing blank, which one is that?

A. This contains distilled water, plus the acids used,

and potassium chromate, to make sure that the reagents did not contain lead. This contains the ash, which is dissolved in hydrochloric acid.

The Master: Q. That is the other vial you are talking about now?

A. Yes. This has the Westbrook precipitated lead in it. You can see the lead.

784 Mr. Gariepy: Show the Master what that is, so he can see the particles.

The Witness: You can see the particles. This is the way it is made (exhibiting vials to the Master).

The Master: Q. One of these looks a little murky.

A. That is a lead, lead chrome.

Q. What is the vial supposed to show?

A. This shows the lead in the Westbrook cap.

Q. What is the first one?

A. This contains the reagents and does not contain any lead.

Q. That is before you put in the Westbrook material?

A. That is right, the Westbrook ingredients.

Mr. Gariepy: Q. With regard to the amount of lead in the various pigments, green and so on, you also performed a test on the Bowman Dairy Grade A milk cap that I sent to you on a day previous, a red one?

A. That is right.

Q. Did that show any lead in it?

A. That showed no lead.

Q. Do you know of any soluble ink that is used on any food container or liquid food container, Mr. Taylor?

A. No, sir.

785 Mr. Gariepy: Cross-examine, Mr. Schaefer.

Mr. Schaefer: I would prefer to defer cross-examination until after lunch, if you can go ahead with some other witness' direct examination.

The Master: All right.

Mr. Gariepy: I would rather you go ahead with this witness, if you can.

The Master: Off the record.

(Discussion had off the record.)

The Master: If you are not ready now to go ahead with the next witness, we can adjourn until this afternoon at one-thirty or two o'clock.

Mr. Schaefer: Whatever is convenient to you.

The Master: What time do you want?

Mr. Schaefer: One-thirty will be agreeable.

The Master: One-thirty. Very well, gentlemen.

Mr. Gariepy: Just a moment. I have got something here that I want to put in, an additional test that he performed, concerning the amount of pigment in this.

The Master: In what?

Mr. Gariepy: In this green, Westbrook green.

The Master: Go ahead.

Mr. Gariepy: Q. Mr. Taylor, I show you a card with a square amount of green ink on it. Did you make
786 this up?

A. Yes, sir.

Q. What is it?

A. That is the milk bottle green used by the Gardner-Richardson Company.

Q. And is that the ordinary depth and thickness used on the container?

A. That is approximately the depth, yes, sir.

Q. And what was your purpose and object in performing a test or in making this test, on the milk bottle green?

A. To show that if we received an order from someone like Westbrook, this is what we would match it with.

Q. Have you matched the Westbrook green with this card?

A. Yes.

Q. And the depth of color indicates the amount of lead or pigment?

A. Not the depth of color. This does not amount to anything, the formula.

The Master: Q. The formula of what?

A. The formula of the Hilton-Davis ink.

Mr. Gariepy: Q. As compared with the Westbrook?

A. As compared with the Westbrook. The formula of the Hilton-Davis ink I know and the quantity of lead in that ink I know. I have tested this Westbrook Farms ink and found it to be a lead pigmented ink. Therefore,
787 any ink matcher, knowing they are both lead inks, would match the Westbrook ink with this Hilton-Davis chrome green ink.

The Master: Q. What for? What do you want to match it for?

A. If we would receive this order from the Westbrook Dairies, it would be matched with this type of ink, which

contains lead, and the Westbrook Dairies has a leaded ink.

The Master: What is the materiality of that, Mr. Gariepy?

Mr. Gariepy: The purpose of showing that is that the Westbrook ink that is now used daily in the city of Chicago, on your unparaffined or unwaxed cap, is the same type of ink and contains the same ingredients as the ink used on the Dean green and the Pure-Pak containers here.

The Master: He has already testified to that.

Mr. Gariepy: Yes, but he matched it up to show the second test of the ink.

The Master: Is that all?

Mr. Gariepy: That is all.

The Master: One-thirty p. m., gentlemen.

Whereupon a recess was taken to 1:30 o'clock p. m. of the same day, Wednesday, September 6, 1939.

788 • • (Caption—316) • •

Hearing resumed before Master Grossman at 1:30 o'clock p. m. on September 6, 1939.

The same counsel present.

The Master: Are you ready to proceed with your cross examination, Mr. Schaefer?

Mr. Schaefer: Yes.

CLINTON L. TAYLOR, resumed the witness stand, and testified further as follows:

Cross-Examination by Mr. Schaefer.

Q. Mr. Taylor, you testified as to the solubility, or, rather, the insolubility of the ink put out by the Hilton-Davis Chemical Company.

A. Yes.

Q. Is all ink, or printing ink, of the same degree of insolubility?

A. No, sir.

Q. That is, there are variations?

A. Do you limit that to that used by the Gardner-
789 Richardson Company?

Q. No. I mean in printing inks generally?

A. I can not recall of any.

Q. Do you mean every kind of ink that is used for printing is of an equal degree of solubility?

A. Insolubility—in what?

Q. In any medium you want to put it into?

A. Oh, no.

Q. Then, there are variations?

A. Yes. I said that would mean you could dissolve it in gasoline.

Q. No. I mean this—you put two different kinds of printing ink in the same medium for dissolution?

A. Well, now, you don't put a printing ink into anything. The printing ink is the finished product that comes in a can, and that is finished. You don't put it into anything.

Q. Yes, I understand that.

A. Any more than you put a paint into anything.

Q. Let me get back to the original question: There are different kinds of printing inks?

A. Yes.

Q. Made according to different formulas?

A. Yes.

Q. Will inks made according to different formulas
790 have the same degree of insolubility?

A. You are covering a tremendous territory there.

Q. Yes.

A. You realize that?

Q. It isn't important whether I realize it or not.

A. Well, then, I would like to be careful what I say. I will just say that is a question I have never had put up to me. I couldn't say.

Q. What is your opinion?

A. My opinion is, no. My opinion is that most all printing inks, all that I have any knowledge of, all that we make are equal in insolubility.

Q. Now, what is it that makes a printing ink insoluble?

A. There is nothing that makes a printing ink insoluble. What do you mean, insoluble in?

Q. I mean insoluble by any means of testing solubility.

The Master: Let's get together. When you say these are insoluble, what do you mean?

A. The pigment I claim is insoluble—not the ink—I said the pigment.

The Master: The pigment.

A. You see there is a difference.

Mr. Schaefer: Q. Then, is the ink which is put out by the Gardner-Richardson Company insoluble?

791 The Master: The ink or the pigment?

Mr. Schaefer: Q. By the Hilton-Davis Chemical Company?

The Master: Are you talking about the pigment or the ink?

Mr. Schaefer: Talking about the ink, now.

Mr. Gariepy: He just answered that.

The Witness: Insoluble in what? I can dissolve it in gasoline or turpentine.

Mr. Schaefer: Q. Are there types of printing inks employed, whether by the Hilton-Davis Chemical Company or by any other company, which are less insoluble than the ink which you described in your direct examination?

The Master: Insoluble in what? Insoluble in milk or water?

Mr. Schaefer: Insoluble in any medium, I don't care.

Mr. Gariepy: I object to that.

The Master: Overruled.

Mr. Schaefer: Q. All right, with regard to gasoline or anything else.

Mr. Gariepy: Objection.

The Master: Overruled.

The Witness: Must I answer?

The Master: Yes.

792 The Witness: Will you read the question for me?

(Question read by the Reporter.)

The Witness: None that I know of.

The Master: Let's get this straight, now. He is making a distinction between solubility of the pigment and solubility of the ink.

The Witness: The ink.

The Master: Now, then—

The Witness: May I say the ink is a pigment, ground in an oil, and if we are talking about milk or water, the solubility is the affinity between water and oil, which, as you know, is practically nil, and the pigment is precipitated out of water when it is washed with water to get rid of any soluble salts, and, therefore, it is free of all soluble mate-

rial. That is your pigment—our pigment—and the pigment is an insoluble material.

Mr. Schaefer: Q. What about the varnish in which you put the pigment? Is that insoluble?

A. That is linseed oil.

Q. Is that insoluble?

A. With gasoline or alcohol.

Q. Is that insoluble in cream?

A. Linseed oil, insoluble in the water portion.

793 The Master: Q. Insoluble in what?

A. Insoluble in the water portion.

Mr. Schaefer: Q. Is it insoluble in cream?

A. I have never had experience with it.

The Master: Q. What is your opinion?

A. My opinion is, no, that it is not soluble.

Mr. Schaefer: Q. That it is not—

A. Soluble.

The Master: Q. In cream?

A. In cream.

Mr. Schaefer: Q. What is the base of your varnish?

A. Linseed oil.

Q. Linseed oil?

A. Linseed oil.

Q. That is a fat?

A. Beg your pardon?

Q. That is a fat?

The Master: A fat—"f-a-t".

Mr. Gariepy: Talk louder.

A. I can hear all right. I just want to be careful. That is a glyceride.

Mr. Schaefer: Q. Has the varnish the same physical composition, the same physical qualities as the pigment?

A. With relation to solubility?

Q. Yes.

794 A. You cover so much territory there when you say "physical".

The Master: Let's make it specific.

A. It is awfully hard for—

Q. Is the varnish as insoluble in milk or water as the pigment, as insoluble?

A. I would say yes.

Q. Well, is it any more insoluble, or less insoluble?

A. Less insoluble, any pigment.

Q. But you would say it is insoluble?

A. I would say it is insoluble.

Mr. Schaefer: Q. Have you made any tests to determine that?

A. No.

Q. What is the composition of the dryer?

A. The dryer is made up of a lead soap, cobalt or manganese soap.

Q. Does that dryer have the same degree of insolubility in milk that the thinner has?

A. Yes, they are tremendously insoluble.

Q. Have you made any tests to determine that?

A. Well, you couldn't manufacture dryer. Dryer is precipitated out of water, you have your materials in solution.

Q. In the same manner as the pigment is?

795 A. Very similar to the pigment.

Q. The test you described this morning on your direct examination was a determination by a chemical process, of whether or not lead had dissolved into the milk; is that a reasonably accurate description of your test?

A. Yes, whether lead had become a soluble salt in the milk.

Q. Did you make any tests to determine whether or not the ink or any component part of it would be released into —could be released—into milk by physical means, as opposed to chemical means?

Mr. Gariepy: I object to that, Master. I think it is going far removed from the question. Physical means—you don't take anything and tear it apart or break it down to find out what there is to it. You can take a glass bottle and break it up.

The Master: What was the question? Read the question.

(Question read by Reporter.)

The Master: I will let him answer it.

A. No. In that case you would just have to take and scrape the material together in the milk—is that what you mean, just physically rub it off?

796 Mr. Schaefer: Q. Physically rub it off, by friction or by bending.

A. You have to rub it off in the milk.

Q. Or by bending?

A. Any way.

Q. Any physical means?

A. Yes.

Q. You made no such test?

Mr. Gariepy: He said "No".

A. No. In my description that is reported.

Mr. Schaefer: Q. That's all right.

A. Excuse me.

Q. What is the smallest quantity of lead detectible in 100 cubic centimeters of milk?

A. Well, we can go down to about, very easily, .0005 millograms.

Q. By the means which you used in the test you described this morning?

A. Yes, that test is tremendously sensitive. Government specifications are .001.

Q. Now, did you make that test to determine whether the amount of lead originally on the container before you performed the test was still there on the container when you got through?

A. No, sir, the carton appeared no different. The
797 test showed there was no lead in the milk.

Q. Yes, I understand that.

A. We assume, therefore, nothing left the carton, since there is nothing left in the milk.

Q. You made no test to determine that?

A. Yes, we tested it for lead.

Q. You made no test of the carton?

A. No.

Q. To determine whether or not the same amount of lead remained on it?

A. No.

The Master: Q. You did not shake these containers, the milk, and portions of the carton, did you?

A. They were not shaken.

Q. No shaking?

A. That is, no agitating.

Q. You put them in?

A. Put them in and let them stand, the same as we fill the cartons with milk. I would like to clear up something.

Mr. Schaefer: Q. Did I understand you—

The Master: Did you want to make an explanation?

A. Yes.

Q. Go ahead.

A. I don't know how much to say. I want to clear
798 up a point. You are not talking about the same material that is on the carton after it is dried.

The Master: Q. What is he talking about?

A. He is talking about fresh ink.

Q. What?

A. He is talking about fresh ink all of the time.

Q. What are you talking about?

A. What we tested was dried ink, it is in an entirely more hard condition, to get that; then when you talk of fresh ink, we talk of fresh ink as something you can pour.

Q. Make a comparison?

A. The difference between a solution of rubber and a piece of rubber tire.

Q. Would you make any comparison between liquid paraffin and dried paraffin?

A. No. There you just solidify something. There is a difference between the skin on top of a paint pail and the fresh bucket of paint. You never can use that skin; it is in a tough condition.

Mr. Schaefer: Q. Have you ever had any complaints at all with respect to any of the ink you have sold?

A. Only in shade, that is our big trouble.

Q. The color of the ink?

A. Yes, that is all. We can take care of anything 799 else before it leaves.

Q. You have never had any experience with complaints with respect to anything else during the period you have been with the company?

The Master: He might have had some complaints about price and things like that.

A. Well, we had that.

Q. Do you know of any complaints about the quality of the ink?

A. The quality of the ink is always the same. Gardner-Richardson have our formulas.

Q. The question is whether you have had any complaints about the quality?

A. Not to my knowledge.

Mr. Schaefer: Q. During that entire period of thirteen years?

A. That's right, that is one reason we were hired to make that ink.

Q. Speaking now, not only about the ink manufactured by the Hilton-Davis Company, but about all types of printing ink, have you ever heard of complaints on account of the solubility of the ink?

A. On the bleeding?

Q. Bleeding?

A. Yes.

800 Q. You have?

A. Yes.

Q. Have you heard of those complaints with respect to ink used in the printing of paper containers for milk?

A. No, because in our organization ink is not made with any pigment which has any tendency to bleed.

Q. I am not talking about your organization. I mean in the industry, generally?

A. You can't say that.

Q. Have you ever heard of those complaints with respect to any complaint on that score, the ink used for printing paper milk containers?

A. No, I haven't. It hasn't come to me.

Q. But you have heard of that difficulty with bleeding, in the industry?

A. That's right, bleeding into the varnish.

Q. In the event there was bleeding, the varnish would carry with it the pigment, would it not?

A. Yes, it would have to.

Q. Are aniline dyes ever used in the manufacture of printing inks?

A. They are.

Q. Do you folks ever use them?

A. We do not.

801 Q. For any type of ink?

A. We do not use them, no.

Q. What are aniline dyes?

A. Well, aniline dyes are coal tar dyes, the most common dyes are red, blue or green, your lipstick or rouges are aniline dyes.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Rall.

Q. If ink is soluble so that it does bleed, can that condition be discovered by physical inspection of the printed product?

A. If there should be a tendency to bleed, that is caught before it leaves the plant.

Q. Assume just for the purpose of the question that you do not discover it.

A. I beg your pardon. That would not occur after a

formula has once been okayed. For example, can I go into a little detail?

The Master: Not too much.

Mr. Rall: Q. I think you don't understand me.

A. Yes.

Q. In response to Mr. Schaefer's questions, you said you had heard, in the industry, of inks bleeding?

802 A. That is right.

Q. Can that condition be determined by an inspection of the printed product?

A. Just by simple physical test, yes.

Q. One reason that inks that bleed are not desirable is that the printed product does not turn out as clear and as sharp as one made with an ink that does not bleed—is that true?

A. No.

Q. That is not true?

A. No.

Q. What is the objection in the industry to inks that bleed?

A. If you made a whiskey label and you pour the whiskey out there you would have ink all over your hands. Whiskey labels must be non-bleeding in alcohol. That is why I specified what the solvent was.

Q. If an ink is made with an aniline dye, can the presence of that dye be detected by physical means, in examining the finished printed product?

A. Yes.

The Master: Speak up, Mr. Witness.

A. Yes, sir.

The Master: The Reporter wants to get what you say. Speak louder.

803 Mr. Rall: Q. Could it also be discovered by chemical means?

A. Very quickly.

Mr. Rall: That is all.

Recross Examination by Mr. Schaefer.

Q. Mr. Taylor, how would you discover the presence of aniline in an ink by a physical test?

A. Well, you just—they have a different appearance to an ink maker.

Q. Take a layman, the uninitiated person?

A. They can not tell.

The Master: Let's not both talk at the same time. Wait until he finishes the question.

Mr. Schaefer: Q. Could a layman tell?

A. I don't think so.

Q. That is, it would take a man highly trained and highly skilled in the ink business?

A. A twenty-dollar-a-week man.

Q. Would have how much experience?

A. A year—six months to a year.

Q. Is an ink made with an aniline dye equally insoluble with an ink made with the pigment which you have described?

A. In water. They are dissolved, aniline dyes, in
804 alcohol, very often.

Q. Yes.

A. You understand that.

Q. Yes. Now, take water?

A. I have never heard a complaint of bleeding.

Q. Answer the question: Is there a difference in the degree of insolubility between an ink made with pigment, which you have described, and an ink made with an aniline dye?

A. I don't think there is. The dyes I am thinking of are precipitated out of water.

Q. The aniline dye, as well as a lead pigment?

A. There are three types of aniline dyes.

Q. Will you think of all three and answer the question?

A. I will. Your aniline dye in your finished ink is water soluble dye, that is blue aniline dye. That could not be used in printing ink. I said that and I stick to it. Take that same aniline dye, precipitate it with soda ash, you get an insoluble dye base which is soluble in alcohol. But, precipitated out of water, it is still aniline dye. If you add tungstate to that aniline dye, you get insoluble tungstate, still precipitated out of water, made with aniline dye.

The aniline dyes are made with dye bases, as much
805 as I am familiar with those. Any thing new can come up any day.

Mr. Schaefer: All right. That is all, Mr. Taylor.

Mr. Rall: Q. What chemical tests could be made to determine the presence of aniline dye in an ink, by inspecting or testing the finished product?

A. Just take the label, pour a little pure alcohol on it. Alcohol is a solvent for the aniline dye. It bleeds. That is

the first indication and you would then suspect an aniline dye.

Mr. Rall: That is all.

Mr. Gariepy: That is all, Mr. Taylor.

(Witness excused.)

HOWARD ORVIS, was called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name.

A. Howard Orvis.

Q. Your address?

A. Winnetka, Illinois.

Q. What is your business or occupation?

A. Public Health Administrator.

806 Q. Public Health Administrator for what place?

A. Winnetka and Kenilworth, Township of New Trier.

Q. What are your duties as health officer?

A. Supervising sanitary procedures, communicable diseases, school hygiene and certain other duties. Those are the major ones.

Q. Do you exercise supervision with regard to the quality of milk in those suburbs you have mentioned?

A. I do.

Q. How long have you been such health commissioner of those villages?

Mr. Schaefer: May we keep the record straight. Dr. Orvis said he was Public Health Administrator.

The Master: Q. What is your official title out there?

A. Health Officer.

Q. Health Officer?

A. Yes, sir.

Mr. Gariepy: Let the record show the word "Public" should be deleted.

A. Health Officer is the official title.

Q. Do the municipalities of Glencoe, Winnetka, Lake Forest, Wilmette, Kenilworth, Highland Park and Lake Bluff maintain a laboratory for the matter of inspection with regard to milk control?

A. I think the list is not exactly correct. Wilmette
807 is not included. Kenilworth, Winnetka, Glencoe, Highland Park, Lake Forest and Lake Bluff.

Q. What is your position with regard to being or not being Milk Sanitarian for such villages as you have just enumerated?

A. There is a contract between these villages and the village of Winnetka by which I supervise the milk control program, with the advice of the health officers of the other villages, excepting Winnetka and Kenilworth of which I am health officer.

Q. How long has that existed?

A. About two years.

Mr. Schaefer: Two years, Doctor?

A. That's right.

Mr. Gariepy: Q. Under what ordinance does the village of Winnetka, of which you are health commissioner, operate with regard to control of milk from a sanitary standpoint?

A. The so-called "Grade A" ordinance recommended by the United States Public Health Service.

Q. Is that in full force and effect at this time?

A. It is.

Q. How do you secure approval or comment with regard to your technique, your research work and your laboratory work, from the United States Public Health
808 Service?

A. There is a regular survey made at certain intervals by the United States Public Health Service and the State Department of Public Health, in which they give us the rating on the work that is done.

Q. Have you secured a rating from the United States Public Health Service during the last year with regard to your work in milk control, inspection and laboratory work?

A. There was one granted last October.

Q. Have you that with you?

A. I have.

Mr. Schaefer: Why not just ask the doctor what it was?

The Witness: I have it here.

The Master: Why don't you just ask him?

Mr. Gariepy: Q. What was the rating you secured from the United States Public Health Service with regard to your milk control, Doctor, in your work?

A. 96 and a fraction.

Q. Are you acquainted with the rating given to the City of Chicago for the same work?

Mr. Schaefer: Now, if the Master please, I move to strike this testimony with respect to the rating of the village of Winnetka and the rating of the City of
809 Chicago.

Mr. Gariepy: Why?

Mr. Schaefer: I don't think it makes any difference. I think we are a shade better than Winnetka, but I don't see the necessity for the contrast.

The Master: We don't care about the City of Chicago. Just ask him as to his rating.

Mr. Gariepy: Q. Did you give your rating, Doctor?

The Master: He already gave it, 96 and a fraction.

A. I already gave it as 96 and a fraction.

Mr. Gariepy: Q. Are you using or permitting the use in the municipality of the single service container commonly known as the "Pure-Pak" here?

A. Yes, sir.

Q. How long has that "Pure-Pak" container been used in these municipalities you just named?

A. Since November of last year.

Q. In permitting its use, have you had occasion at any time to go to the Cherry River Paper Mills at Cherry River, Virginia, and inspect the operation of the mills concerning the material in the paper and the quality of the water used?

A. I have not.

Q. How often have you made tests or checks from
810 time to time with regard to the quality of material sold in said containers?

A. Monthly.

Q. Monthly?

A. Yes, sir.

Q. Have you brought with you today the records concerning the tests done on the quality of the material sold in those "Pure-Pak" containers?

A. I have.

Q. What do those counts show, monthly, from the time you started in November, 1938, until this time?

A. Do you want me to read all of the plate counts on the finished product? Is that what you want?

Q. Yes, Doctor.

The Master: You mean the milk?

A. The milk. 4,000, November 22, 1938.

The Master: Q. 4,000 what?

A. Colonies per cubic centimeter of milk represented,

giving representation of the number of bacteria that occur in milk.

Mr. Gariepy: Q. Proceed, Doctor.

A. On November 28,—2,000.
January 4,—9,000.
January 23,—13,000.
February 20,—6,000.
March 20,—8,000.
811 April 17,—15,000.
May 3,—2,000.
June 19,—3,000.
July 27,—3,000.
August 25,—2,000.

Q. Is there a standard prescribed by the United States Public Health Service, under which your village and these villages operate, with regard to the number of colonies per cubic centimeter of milk that is permitted?

A. Yes.

Q. What is that standard?

A. The maximum by the ordinance is 30,000.

Q. Are these all within that range?

A. They are.

Q. What have you done from time to time since November, 1938, further than checking the colonies per cubic centimeter of milk as supplied in these paper containers?

A. We inspect pasteurization plants in detail once a month.

The Master: Q. What plants?

A. Pasteurization plants where this milk is prepared. We also checked the containers as to their sterility or near sterility.

812 Mr. Gariepy: Q. Have you performed the same tests with regard to milk sales in glass bottles?

A. Yes.

Q. How do the counts on the glass bottles for the same period of time compare with the counts on the paper bottles?

A. Do you mean an average of all of these from plants that we have?

Q. Yes.

A. I have no comparison of glass out of the same plant.

Q. The plant does not sell milk in glass bottles?

A. No.

Q. Have you Bowman's or Borden's?

A. Yes.

Mr. Schaefer: Q. What is this—milk?

A. Milk.

Mr. Gariepy: The same months, sold in the same suburb.

Mr. Schaefer: If the Master please, I object to any testimony along that line, because it obviously is not a comparison, as Dr. Orvis indicated. You are comparing the bacterial count of milk from one plant with the bacterial count of milk from another plant and it has no bearing on the issues.

813 The Master: I will let him answer the question. You can argue later whether it has any effect in this case.

The Witness: Do you want me to read these?

The Master: Yes, the same as you did before.

The Witness: For these dairies.

The Master: Q. By the way, this other list you gave us here, what did that refer to?

A. That referred to the bacterial content of the milk in Dean's containers as it was delivered to the consumer.

Q. Now, what is this going to be?

A. The same situation. This is Borden-Wieland.

Mr. Gariepy: Q. In glass containers?

A. In glass containers:

November 21, 1938	2,000
November 28, 1938	8,000
January 16, 1939	12,000
January 23, 1939	11,000
February 23, 1939	20,000
March 27, 1939	21,000
April 26, 1939	20,000
May 10, 1939	8,000
July 11, 1939	5,000
August 3, 1939	21,000
814 August 29, 1939	9,000

Q. What test have you made with regard to the sterility of the paper bottle since November, 1938, to this time, Doctor?

A. We are not doing work on sterility of bottles in the case of Bordens; we are accepting Chicago's inspection; that is part of the plant inspection work.

Q. With regard to the paper bottle?

A. With the paper bottle that Borden is putting out.

Q. Yes.

A. The paper bottle, through arrangement with Evanston, in cooperation with them, they are transmitting their reports of their work on paper bottles. We have a division of territory in which they take certain territory and make reports to us, and we take certain territory and plants and we make reports to them. They have been satisfactory. I have not the detail here.

The Master: Q. On what bottles are these?

A. Evanston.

Q. Whose paper bottles?

A. The ones being used by Borden.

Mr. Gariepy: Q. What about the Fieldcrest, or Dean bottle; do you get reports?

A. Also from Evanston, they are also doing tests 815 on those. Those have been within the requirements.

Q. Has that existed since November, 1938, to this time?

A. Yes, sir.

Q. When you say "within the requirement," what do you refer to?

A. In standard methods prescribed by the United States Public Health Service, they give a standard method, that a container shall not contain more than one colony per cubic centimeter of content of container.

Q. These all have been within that permissible range?

A. That is true.

Q. How many years have you been health commissioner?

A. I have been health commissioner there twelve years. I am in my thirteenth year.

Q. All during this time have you performed such work as you have described with regard to the testing of milk in the capacity of Milk Sanitarian?

A. I have.

Q. Do you feel as though you have had adequate control of the quality and sterility of the glass container all of the time the glass container has been used in these villages that you have had supervision over?

A. The glass container is not ideal. There are 816 times when it does not come within the requirement.

Q. Do you feel that you have adequate control now with regard to the requirements and the standards in the matter of the sanitary and sterility aspects of the paper bottles?

A. I think they are at least equal to the control that we have with glass bottles.

Mr. Schaefer: I move to strike that as not responsive.

The Master: I will let it stand.

Mr. Gariepy: Q. Have you had any occasion to go to the mills where the paper board is made, out of which these containers are formed, and used in the sale of milk?

A. I have never been in the mill.

Q. Have you had any complaints with regard to the taste of milk in the paper containers as sold in these suburbs over which you have jurisdiction and control?

A. No.

Q. Have you had any complaints with regard to the matter of cream line or visibility of cream line?

A. I have had no complaints on it.

Q. Is there a method commonly known to milk sanitarians for finding and detecting the quality of
817 milk for quantity of milk fat?

A. Yes, sir.

Q. Is that determinative of the cream line?

A. That determines the amount of fat in milk. It may or may not be comparable to the cream line. You may get types of milk in which the cream line may not be very clear, but it is generally a comparable basis and not an absolute basis.

Q. For ascertaining of cream content?

A. Yes.

Q. Have you any rule or regulation existing now concerning the use of milk bottles in these suburbs in cases or instances where there is contagious disease existing?

A. Where certain contagious diseases exist, our regulation is that no container of milk should be left on the premises; that they shall either leave the container, and it will be destroyed after use, or that the milk shall be poured from the returned receptacle into some container of the householder.

Q. How is that applicable to the glass container?

A. It is necessary to involve certain hazards in pouring from the glass container into some container, the sterility of which we are not acquainted with.

Q. How long has your village operated under the
818 United States Public Health ordinance and rules and regulations?

A. About two years.

Q. How often have you made tests of pasteurization plants, of those plants permitted to sell milk in your municipalities or in the municipalities in which you have control?

A. We test them at various periods of once a month, approximately, sometimes more frequently and sometimes less.

Q. Have you seen in your experience of several years numerous glass containers used for the sale of milk at retail?

A. Yes.

Q. Do you know in the trade or in your profession of anything commonly known as a standard milk bottle?

A. Yes.

Q. What is that?

A. Standard milk bottle is a glass container of specified content and certain labeling.

Q. What do you call the "Pure-Pak" container and the other paper containers that are being permitted to be used in your municipalities now?

A. We interpret the meaning of the ordinance to include those.

819 Q. Have you had any complaint since November, 1938 concerning absorption of milk into the paper board used in the paper containers?

Mr. Schaefer: That is objected to. I have let this testimony as to complaints go in so far, without objection, but there comes a point when I must object. Whether there have been complaints or not is entirely immaterial.

The Master: Yes. I will sustain the objection.

Mr. Gariepy: Q. Are you acquainted with the various rinse tests that are usually performed for finding the colonies per cubic centimeter on a container?

A. Yes.

Q. Have you used those in your work in Winnetka?

A. We have.

Q. And are the same tests employed as employed in the glass bottles?

A. Yes.

The Master: Q. Are they employed on the paper containers, too?

A. Yes, sir.

Mr. Gariepy: Q. The same tests?

A. Yes, sir.

Q. These counts that were read off by you as
820 having been tabulated from November to this date on the milk sold in the paper containers, how were those counts taken?

A. Those counts were made by collecting samples from the delivery truck and taking carefully measured 1 c. c. samples of those and plating it according to standard methods.

Q. Were they picked at random from time to time or was there any particular arrangement concerning the picking of the truck and so on?

A. No. They are picked at random.

Q. Did you secure blank samples of the paper containers from time to time, from the Chemung Plant of the plaintiff for the purpose of performing tests?

A. When inspection is being made, he takes one of the containers off of the line and takes it around the filler and has it capped and takes it back for the test for sterility.

The Master: Q. How is that?

A. Takes it around the filler and has it finished, capped, as it will be.

Mr. Gariepy: Q. How often has that been done, to check upon the container?

A. Approximately once a month.

821 Q. Is that done by pre-arrangement, or do you appear there whenever it suits your pleasure to make an inspection?

A. That is true.

Q. Have those tests been satisfactory?

A. They have.

Q. Have they been within the standard and the range permitted by the United States Public Health Service?

A. They have.

Q. Have you performed any disintegration tests on the paper board since November, Doctor?

A. We have not.

Q. Why have you not performed such disintegration tests?

A. We are getting reports of that test through Dr. Jordan, who is taking the board as it is manufactured and sending reports of those tests to us, on the bottom of each carton is a number corresponding to the batch from which the board is taken, from manufacture, and we compare

the number on the cartons we take with a test that has been submitted to us.

The Master: Q. Who is Dr. Jordan?

A. Dr. Jordan is a member of the committee on standards for the United States Public Health Service, for milk containers.

822 Mr. Gariepy: Q. How often have you been getting those, Dr. Orvis?

A. They come regularly, covering the paper that is being used. They probably come every sixty days or something like that. I wouldn't be able to say exactly.

Q. Are you of the opinion that gives you adequate control with regard to the bacteria counts in the paper board itself, of the quality of the paper board?

A. I think it does.

Q. If at any time you felt that the board reports were not genuine, that the reports on the paper board that you received were not genuine or authentic or accurate, do you have a method for checking up on the quality of the paper board, concerning bacteria count?

A. We could easily do a disintegration test in our laboratory.

Q. You have the paraphanalia there?

A. Yes.

Q. Would it require that you go to the mill in order to perform that disintegration test?

A. We would perfer to take the board from the container as it was on the assembly line or the filling line.

823 Q. The finished product itself?

A. Yes.

Q. Have you picked up the glass bottles of milk that you used as samples for tests from time to time at random, as you did the paper bottles of milk?

A. Yes.

Q. These reports of inspection and the bacteriological work performed in your laboratory and approved of by the United States Public Health Service also cover this matter of the inspection of the paper containers and the colonies per cubic centimeter?

Mr. Schaefer: That is objected to, if the Master please. There is no testimony here that the United States Public Health Service has approved any bacteriological tests, to which Dr. Orvis has testified. The United States Public Health Service isn't in that business and doesn't do it.

The Master: I sustain it.

Mr. Gariepy: I withdraw the question.

Q. What rating is considered as compliance with the United States Public Health Service Ordinance with regard to the bacteria count in pasteurized milk?

A. If we are going to be a recognized city we have to have an average of 95 per cent compliance; that would
824 include laboratory and inspection and all of the other factors. However, there is no set standard to which we have to comply; it is simply a matter of whether we get sufficient rating to be an accepted city.

Q. Have you had an accepted rating from the Department of Public Health at Springfield, Illinois?

A. Yes, they have expressed themselves on our rating as acceptable.

Q. What rating have they given to you, Doctor?

A. Well, the rating that was given on this survey, they gave us one hundred percent rating on our laboratory procedures.

Q. The total rating on all the procedures is 96.7?

A. That is correct.

Cross-Examination by Mr. Schaefer.

Q. Doctor, what phases of the production, processing and distribution of milk are regulated under the United States Public Health Service Standard Milk Ordinance?

A. What processes?

Q. What phases of the production and distribution of milk?

A. They start with the control of the health of the cow, the sanitation of the production and cooling on the
825 farm, the processing of the milk in the collection and pasteurization plant and the laboratory control of the finished product as delivered to the consumer.

Q. They even regulate, in some instances, the food given to the cow?

A. The food given to the cow that may in any way be deleterious to the quality of the milk, may be objected to.

Q. Now, with respect to the sanitation of the farm, the United States Public Health Service Standard Milk Ordinance—and hereafter I will just call it the standard milk ordinance, which is the one under which you operate, contemplates inspection of the dairy farm on which milk is produced?

A. It does.

Q. It contemplates the regulation of such things as the water supply of that farm the ventilation of the cow barn, the complete sanitary condition of the cow barn and of the cow yard.

A. Yes.

Q. Do you make inspections of farms to see whether or not that ordinance is complied with?

A. We have an inspector that spends his entire time on farms.

Q. On farms?

A. Yes.

826 Q. Only milk from farms inspected by your inspectors is permitted to be sold in the villages of which you testified you are employed?

A. If it is acceptable. We use the regular rating of the Public Health Service.

Q. But you don't permit any milk to be sold in those municipalities which does not come from inspected farms?

A. No.

Q. And with respect to receiving plants, do you inspect receiving stations or receiving plants?

A. Our inspection covers pasteurization plants. All of the plants that are under our inspection also pasteurize at the plant of receiving.

Q. What do your men look for when they go to inspect a pasteurization plant?

A. They check first on the raw milk that comes into the plant, as to its quality.

Q. Bacterial count?

A. Bacterial count or reductase test which we use. They check on the equipment as to its conformity to the ordinance and its operation in conformity to the ordinance; also after use, as to proper knock down and cleansing bacteriacidal treatment of the pipe and the equipment of

827 the plant, checking of the pasteurization charts and thermometers, to see whether they are standard, and finally they check the bottle washing facilities and the container as it goes out after it is cleansed, and bacteriacidal equipment.

The Master: What does this have to do with the paper container?

Mr. Schaefer: I think it is quite material.

The Master: Go ahead. I don't see it yet.

Mr. Schaefer: Q. They also inspect the delivery trucks?

A. Yes. Another point they inspect is the source of water at the pasteurization plants and its acceptability.

Q. Would you consider it good public health practice to permit milk to be sold in one of your municipalities from a pasteurization plant not inspected?

A. No. I wouldn't want to do it.

Q. And from a farm not inspected?

A. No, I wouldn't want to do it.

Q. Would you consider it—is it in conformity with the United States Public Health Service Standard Milk Ordinance to accept tests, the result of reductase tests conducted by the pasteurization plant where the material is received?

A. Yes, provided they are checked at intervals to
828 see that they are properly performed.

Q. That is, your man goes out there physically and checks them, himself?

A. We check spot samples at times.

Q. You spot check?

A. Yes, we spot check.

Q. And at irregular intervals?

A. That is right.

Q. You spot check also the bacterial count of the pasteurized milk?

A. Yes, that is collected from the distribution truck at irregular intervals.

Q. Would you consider it good public health practice to accept the bacterial count of the dairy?

A. No. I would prefer to have my own, select my own sample.

Q. When you are checking on the bacterial count of milk containers by the rinse test, milk bottles, glass bottles, by the rinse test before they are filled with milk, would you consider it good public health practice to rely on those made by the dairy?

A. You get the same as you do on the raw milk, to a certain extent, provided you spot tested them.

Q. Without a spot test, you wouldn't consider it good public health practice?

829 A. No. I would want to have some control over it.

Q. Do all of the municipalities you mentioned on your direct examination make farm inspection?

A. We are making inspection and do all of the work and submit monthly reports to all of these villages.

Q. Then they pay the village of Winnetka through some arrangement as to compensation?

A. Yes, that is right.

Q. Now, have any of the municipalities you enumerated adopted any regulations concerning the use of paper milk containers?

A. Not as yet. We have a tentative one we are operating under and gathering data from which we will in a few months probably adopt regulations.

Q. What do you mean when you say you are operating under a tentative regulation?

A. Tentative regulation of the United States Public Health Service, relative to paper containers, and we are operating as near as we can to that at the present time. That hasn't officially been adopted as yet.

Q. On the contrary, are you sure your information is correct?

A. What information?

Q. When you say that it has not been officially adopted?

830 A. I mean by our villages.

Q. You mean the villages have adopted no final regulations?

A. No.

Q. You don't mean—

A. The process of drawing that up, the ordinance is being drawn up.

Q. Do you know whether or not the United States Public Health Service has adopted regulations on that subject?

A. I think they have just adopted one with their 1939 standardized methods.

Q. Are you familiar with the provisions of those regulations?

A. Some of them.

Q. None of the municipalities have any regulations concerning the process of manufacturing of paper board?

A. Not as yet.

Q. Do you contemplate adopting those regulations?

A. Yes, they are in the process of being drawn up as an ordinance.

Q. Those regulations will contemplate what, with respect to paper manufacturing plants?

A. So far as the paper manufacturing plants, you

mean control of the paper, etc., it recommends it be
831 made from virgin bleached pulp, so far as the contents of the paper go.

Q. And that is all?

A. There are other numerous regulations, but that is the primary one.

Q. What are some of the others?

A. Some of the others are the contents of the material, that is to say in testing the board, to be insoluble, to be free from bacterial content, and the others are the type of paraffining material, the temperature at which it shall be heated for coating the paper and things of that kind, and the recommended bacterial contents by the wash tests for the finished container.

Q. By the rinse test?

A. By the rinse test.

Q. You have no regulations concerning paper conversion plants?

A. We have not had.

Q. In effect?

A. No.

Q. You have no tentative regulations concerning them?

A. Yes, sir.

Q. What do those tentative regulations contemplate?

832 A. This is in regard to the conversion plant.

Q. The conversion plant?

A. Yes. That will be the handling of the paper, the proper covering of the paper if it is not converted at the paper plant itself.

Q. Yes.

A. Between that and the conversion plant, discarding of the upper and lower sheets or that which may be contaminated by handling, and the proper packaging of the finished cartons, the finished containers in cartons so they will be in no way contaminated in shipping and handling.

Q. How will you determine whether or not those regulations are complied with?

A. We will determine that by the condition of the container as it reaches the plant, the pasteurization plant.

Q. You mean you will determine whether or not the first or the last sheet have been discarded by a test made on a finished container picked out at the dairy?

A. If the conversion is done at the dairy, as in this case,

we will observe at the dairy as to whether these regulations are complied with.

Q. We are using a term you may not be familiar
833 with, Doctor, that seems to have been employed by the people in the paper container industry. When I say "conversion plant" I mean a plant at which the paper blanks are cut out from which containers are made, cut out from large sheets of paper.

A. Yes.

Q. I don't mean the conversion in the dairy.

A. Well, there are some of them that convert into the entire container at the conversion plant, and others are flat. I have sheets come flat to the plant. So far as in this particular instance we have in mind here, this disintegrated board test would satisfy us as to the condition of the container blanks as it comes to the plant.

Q. You can determine whether or not that first or last sheet was discarded?

A. We can tell that.

Q. You can determine from that test how it was wrapped when it is shipped from the paper mill to a conversion plant?

A. No, we couldn't tell that.

Q. Could you tell whether or not any of the regulations you have just enumerated with respect to conversion plants are being complied with by that test?

834 A. No, we couldn't tell that.

Q. What is the object of adopting regulations relating to those matters?

A. We could require from the plants that use the paper, reports from individuals who are making these inspections.

Q. What individuals do you have in mind?

A. At the present time we require reports—a report on the disintegrated board.

Q. From whom?

A. Dean has to give us the report on that from each batch a container is made.

Q. Dean makes the test?

A. No.

Q. Who makes the test?

A. It is made by Dr. Breed's laboratory at Geneva.

Q. Is that the Dr. Jordan whom you mentioned on your direct examination?

A. He is one of the men. The work is under the supervision of Dr. Breed, he is chairman of the committee.

Q. You inferred, or at least I thought you inferred in your direct examination, that Dr. Jordan was connected with the United States Public Health Service?

835 A. Only indirectly. I think he is a worker with the committee that has been appointed by the American Public Health Association.

Q. You said the United States Public Health Service, I thought.

A. I may have been wrong.

Q. Jordan is not connected with the United States Public Health Service?

A. I don't think so.

Q. Now, how would Jordan or a man occupying an equivalent position, similarly located, determine by disintegration tests whether or not these regulations you propose to adopt have been complied with?

A. Not unless he made inspections.

Q. Do you contemplate that inspections be made?

A. That may be. Such a thing is being discussed as part of the regulations. I am not sure whether it will be or not.

Q. Is there any point in adopting the regulations if you can not carry them out?

A. No, there is no point in adopting the regulations if you can not carry them out.

Q. The only way you can carry out those regulations you have enumerated and further regulations you contemplate is by inspection?

836 A. That is so far as covering the board going to a conversion plant, that would be true.

Q. How about the paper plant?

A. The paper plant itself?

Q. Yes.

A. Personally, I doubt whether it is necessary to inspect the paper plant. Paper as it comes from the hot rolls is practically a sterile product from the finished paper.

Q. If you don't know, just say so. Do you know of your own knowledge whether or not the sanitary quality of paper produced by a paper mill is uniform from day to day and from hour to hour within a paper manufacturing plant?

A. I would not anticipate it were. I have not inspected

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the plants, but I would not believe that is true in any plant.

Q. The testimony here is that there are considerable variations, not only from plant to plant, but within the same plant, and not only from day to day, but—

A. I would say that that would be true

Q. Now, without inspection, how are you going to determine the sanitation or the sanitary condition of the paper plant?

837 A. You are not going to, without inspection. You are producing a practically sterile product as an end product. The contamination of that paper will be in the handling thereafter.

Q. Do you know whether or not there are considerable degrees of fluctuation in the bacterial count on finished paper of paper mills?

A. Yes.

Q. You know that there are?

A. The research that has been done shows that.

Q. How will you know whether the paper being used in paper containers in your municipalities is of a high sanitary quality or a low sanitary quality?

A. I will be willing to depend upon the disintegration board test.

Q. How much board will you disintegrate?

A. A gram per container.

Q. Yes, now how many containers out of a lot?

A. We will run them at intervals. If we find high tests, of course, we will run much more frequently, the same as we do when all of the process is controlled.

Q. Where is the paper used in the paper containers sold by the Fieldcrest Dairies converted?

838 A. It is converted in a Chicago plant, as I understand.

Q. Do you consider it important where it is converted?

A. It is interesting. It is mildly important.

Q. Do you think it is important from a public health point of view?

A. I would say it had significance. It is not the most significant thing by any means.

Q. What is the most significant thing?

A. The most significant thing is the condition of the container at the time the milk enters the container.

Q. And despite the variations, from plant to plant, and

within plants, from day to day and from hour to hour, do you believe that my sampling of one container at intervals of thirty to sixty days is sufficient from a public health point of view?

A. It is comparable to our other methods of control as we use them for glass.

Q. Now, is it? Let's just analyze that. You testified you make a physical inspection of the plant, the pasteurization plant and of the equipment for washing the bottles?

A. Yes.

Q. Say "Yes", instead of nodding.

839 A. Yes.

Q. Answer out, so that it will show in the record.

A. Yes.

Q. And then you finally determine the end result of the operation of that equipment by a test?

A. By a test.

Q. You testified you would not be willing to rely on the test, alone?

A. Not on the washing of bottles.

Q. And yet you say it is a comparable method?

A. The idea is comparable, that you are taking only one bottle out of several thousand to make your tests. You are also taking only one paper container out of several thousand to make your test. We can't take all of them. That goes beyond the ability of our inspectors to cover.

Q. That is true with respect to glass and with respect to paper?

A. To anything, yes.

Q. With respect to glass, you would consider it adequate from an adequate health point of view to rely solely on the rinse test of a bottle without inspection of a pasteurization plant?

A. I think a rinse test of a bottle could give us

840 a very good idea if we go behind it with inspection of the container, combined with inspection of container.

Q. Speaking of the glass container—

The Master: Rinse test of a container, combined with inspection?

A. As you take the container, you inspect it as to whether it is physically clean, whether there is any debris left in the bottle, as well as the bacterial test and things of that kind.

Mr. Schaefer: Q. You have not followed that practice with respect to glass, have you?

A. Yes, we do the same with our glass.

Q. I thought you testified you inspected the pasteurization plants?

A. We also take samples of the bottles, it is part of the process.

Q. You don't rely on the rinse test alone in the case of the glass bottle?

A. No. We look at the container and inspect the container as well as the rinse test.

Q. You look at the container and inspect the container as well as the rinse test, but you also inspect the plant.

A. Yes, sir.

841 Q. You inspect the equipment?

A. We inspect the equipment.

Q. Regularly?

A. Yes, sir.

Q. And a pretty rigid inspection?

A. Yes, sir.

Q. Yet you consider from a public health point of view, it is good public health practice to relax the practice you follow in the case of glass, in the case of paper?

A. I think there is less hazard in the paper container than in the glass container, which may have been picked up at a home where there is contagion or where it has been set out and the flies have contaminated it and the material has dried on the glass, for instance.

Q. So far as you know, is there any other health officer, other than those in the municipalities which you have described, who have taken that view of the situation?

A. I don't know whether there are any others or not.

The Master: Q. When you make this test of the paper container, do you also make inspections of the machinery and equipment of the dairy?

842 A. We do.

Q. And pasteurization equipment?

A. Of the entire equipment.

Q. What is the difference in your entire inspection, where you inspect the glass bottle and where you inspect the paper container?

A. Everything that goes on in the plant is inspected in either case.

Q. The only difference between the paper container and the milk bottle inspection, is what?

A. The history of it before it gets to the plant.

Q. Well, I don't understand that. You make a rinse test and a physical inspection of the milk glass bottle container?

A. Correct.

Q. What do you do in the case of the paper container?

A. The same.

Q. You make a physical inspection of the paper container?

A. And rinse test.

Q. And a rinse test?

A. Yes, sir.

Q. But, you don't make any disintegration test?

843 A. We are not making a disintegration test. We have a test given to us of the disintegration of the batches of board from which the paper is made.

Q. Who gives that to you?

A. That comes through Dr. Breed's laboratory at Geneva, that is given to us at regular intervals.

Q. Go ahead.

A. As to the quality of the board.

Mr. Schaefer: Q. What you inspect in the pasteurization plant, in the case of glass, is chlorination, washing and sterilization of bottles?

A. Yes, that is true.

Q. Who selected the samples of the paper that Dr. Jordan tests?

A. Dr. Jordan does.

Q. Are you sure of that, Doctor?

A. Or some one under his control. It is under his control, at least.

The Master: Q. What does this Dr. Jordan conduct that is different from the one you mentioned that Dr. Breed conducts?

A. He is working at the same laboratory.

Q. Is that the same test?

A. The same test.

844 Q. You mentioned Dr. Jordan has a public health service at Washington, didn't you?

A. No. He is working for the committee of the American Public Health Association—not the United States Public Health Service.

Q. I see. His is a disintegration test, isn't it?

A. Yes, sir.

Q. His and Dr. Breed's is the same thing?

A. Yes, sir.

Mr. Schaefer: Q. Do you know of your own knowledge how Dr. Jordan's samples are selected?

A. I have not seen them selected.

Q. Do you know whether or not he gets them from the plant?

Mr. Gariepy: I object. He said he didn't see them, and he couldn't tell. That is the answer.

The Master: He is asking if he knows.

A. No, I don't know, except the rules that are laid down by the United States Public Health Service, we assume they are being followed out.

Mr. Schaefer: Q. What rules?

A. That they shall be selected at random from the material that is in a fabrication plant, as I understand it.

The Master: Q. What plant?

845 A. Fabrication plant where they are folded.

Q. Who does the selecting?

A. Dr. Jordan does. I have not seen him do this.

Q. Is it your understanding that Dr. Jordan goes to the plant, or that the plant merely sends him a container and says "Here, go ahead and examine it"?

A. I understand he is doing his selecting.

Mr. Schaefer: Q. Did you ever make any inquiry to ascertain whether he is?

A. I have been told that. I have not seen it done.

Q. Dr. Sanborn testified those were sent to Geneva by the mill.

A. I see.

Q. You made no inquiry to determine what the fact was?

A. I have not talked to Sanborn or Jordan about it.

Q. Did you make no inquiry of any one else to determine who took the samples?

A. Any inquiry?

Q. Yes or no, Doctor, have you made any inquiry to determine?

A. I have made inquiry on that.

Q. Of whom did you inquire, Doctor?

Mr. Gariepy: He is answering, if you will let him.

The Master: Answer the question.

846 Mr. Schaefer: Q. Of whom did you inquire?

A. I inquired through communications of a representative—I don't know what his name was. We were assured that was the method by which it was being done.

Q. You communicated with a representative of whom?

A. There was a party at Dean's. That transaction was personal.

Q. By Dean's, you mean the Fieldcrest Dairy?

A. The Fieldcrest Dairy. We were there making investigation and my inspector inquired of him as to the source. He assured him, as I understood it, that they were taking their samples—

Q. Were you there at that time?

A. I was not there.

Mr. Gariepy: I move to strike that. It is all rumor and guess and based upon hearsay.

Mr. Schaefer: I consider the fact it is hearsay as rather important.

Mr. Gariepy: I move to strike it.

The Master: I think I will let it stand. It shows what depth the inspection has gone to.

Mr. Schaefer: Q. Are you aware, Doctor, that defects in the quality, the sanitary quality of paper, are per-
847 ceptible when the paper comes off the calender stacks at the paper mill?

A. I understand there are sometimes spots on the paper that indicates contamination.

Q. Selection of the sample might be an important factor, then?

A. I suppose it would, yes.

The Master: Q. Just where is it you have taken it, as to these disintegration tests—Geneva?

A. Yes, Geneva, at the laboratory there.

Q. Well, now, is Geneva some public organization or private organization?

A. It is the experimental station of the New York State Agricultural Department. It has to do with milk control. Dr. Breed is also the chairman of the committee of the American Public Health Association to carry on research work in regard to paper containers.

Q. That is a private organization?

A. The American Public Health Association is.

Q. And Dr. Jordan is connected with that same organization, is he?

A. That is true.

Mr. Schaefer: So that your recollection is clear, this is the organization which Dr. Sanborn testified was financed by paper manufacturers.

848 The Master: That is that public health organization.

Mr. Schaefer: No. It is private.

The Master: What is the name of it?

Mr. Schaefer: The Geneva Experimental Station.

Mr. Gariepy: Of the State of New York.

Mr. Schaefer: They are doing this work under a grant of money furnished by the manufacturers of paper and paper containers.

The Master: They are doing it for the New York State Agricultural Department.

Mr. Schaefer: Yes, so I think, from the testimony. Dr. Sanborn testified he was working for the consumer.

Mr. Gariepy: Then it is for the public.

The Master: For this experimental station which is under the supervision of the State of New York.

Mr. Schaefer: There is no testimony to that effect.

Mr. Gariepy: Yes, there is. Look in the record. He says he is working for the ultimate consumer. The consumer is public health.

The Master: Of course, that is argumentative, but here is a public official who says he takes the word of this group of experimenters at Geneva, who, in turn, get their samples from the paper companies, and the paper companies do
849 the selecting of the particular samples which are submitted to the experimental station. Now, with those samples so submitted, that group of testers makes certain experiments and sends a report out to this witness, and he takes their word for it, as to what they have found is the result of their experiment. Now, that is all that Mr. Schaefer is getting at.

Mr. Rall: I don't quite recall, but it seems to me, of course, Dr. Sanborn's testimony did cover the method by which that selection is made, and I think he told of the particular person responsible to him who made the selection. At least, the record is clear as to that.

Mr. Schaefer: Whatever is there is there.

The Master: Mr. Schaefer says the selection is made by the paper company.

Mr. Gariepy: And our answer is—so what? Suppose it is selected.

The Master: That is what Mr. Schaefer says.

Mr. Gariepy: So what, Mr. Schaefer? You people go down and select it.

The Master: They might select it, either way. The witness that selected and produced samples here selected some pretty bad ones, as I recall it. Go ahead.

850 Mr. Schaefer: Q. Whose word did you take as to the sanitary conditions in the conversion plant?

A. I have no control of conversion plants.

Q. No control at all of the conversion plant?

A. No.

The Master: Q. What do you mean by the conversion plant?

Mr. Schaefer: The plant which Dr. Orvis thinks is in Chicago, which is actually in Middletown, Ohio. By a conversion plant I mean the plant at which the paper is cut, formed, printed, and one side glued.

The Master: I see.

Mr. Schaefer: Q. You have no control of that plant, at all, Doctor?

A. No.

Q. If an employe in the conversion plant lived in a home where there was an active case of typhoid fever or scarlet fever, diptheria or some other disease, and that employe handled the paper, would you consider that good sanitary practice?

A. No, that would not be good sanitary practice.

The Master: Q. Would that same condition possibly exist in case he were a milk bottle washer?

A. Exactly. Some hazards in both cases.

851 Mr. Schaefer: Q. What steps do your municipalities take to control that situation in the case of bottle washers?

A. Any one that operates in a milk plant, of course, the State statute is that they have to report all cases of contagious disease and desist from working in a pasteurization plant during the period that the illness occurs in the home.

Q. You see that they do desist from working?

A. Yes.

Q. And you get reports?

A. Yes, sir.

Q. And there is a criminal penalty attached if they continue to work?

A. There is.

The Master: Q. The same thing applies in the case of an employe who is in the same condition and works on a paper container?

A. I don't know of any such statute anywhere.

Mr. Schaefer: Q. At what temperature is paraffin ap-

plied to the paper containers in which milk is being sold in the municipalities you represent?

A. About 161.

Q. For how long a period are the paper blanks which are being sold in those municipalities immersed in
852 paraffin?

A. Sixteen seconds.

Q. How would it affect your attitude towards the use of paper milk containers if you knew the United States Public Health Service had promulgated regulations requiring that it be immersed in paraffin at not less than 180 degrees for not less than thirty seconds?

A. I knew that was true.

The Master: What is that?

A. I knew their new requirement—I thought was 175 but it is decidedly more than ours.

Mr. Schaefer: It is 180, Doctor.

A. It is 180.

Q. How does that affect your attitude towards the use of paper containers?

A. Some of the research work out of town seems to indicate that neither 160 nor 180 would make absolutely sterile containers, and the viscosity of the material with which it is covered may be a greater factor of sterility of the container than is the temperature of the paraffin.

Q. That is in accord with the testimony here, I think. Do you propose to require in your new regulations
853 immersion at 180 degrees at not less than thirty seconds?

A. I anticipate we will follow the recommendation of the United States Public Health Service.

854 Mr. Schaefer: Now, if we might have a recess, for just a few minutes, it will give me a chance to check up.

The Master: Very well.

(A short recess was here had, after which the proceedings were resumed as follows:)

Mr. Schaefer: Q. Dr. Orvis, why are these municipalities with which you are connected going to adopt regulations pertaining to the manufacture and handling of paper containers for milk?

A. It has been the agreement between the municipalities that they will follow out such procedure as the United States Public Health Service recommends, as far as it is within their power to do it.

Q. Is it for the protection of the public health?
A. It is.
Q. You would not adopt those regulations unless you thought they were necessary, would you?
A. No. We have to have an authoritative ordinance and method of control in order to compel it, and have some method of survey, or otherwise, by which we can sell our services to the other villages.
Q. And you cannot regulate without regulations?
A. That is true.
855 Q. That is, you are in a rather embarrassing position now, with tentative regulations, are you not?
A. Yes.
Q. There is no way of enforcing them?
A. Yes, that is true.
Q. We run into the same situation here occasionally, and it makes difficulties.
A. Yes.
Q. Now, Doctor, considering the fact that up until October or November of 1938, you have consistently checked the milk sold in the municipalities whose health you are protecting from the cow to the consumer, do you feel the same sense of security in permitting the sale of milk in containers of unknown origin that you feel in permitting the sale of milk in glass bottles, sterilized under your inspection?
A. I think there is no greater hazard involved in the selling of milk as we are selling it in glass containers or, in paper containers, rather, than there is in glass containers.
Q. Do you feel the same sense of security?
A. I feel the same sense of security, yes.
Mr. Schaefer: That is all.

856 *Redirect Examination by Mr. Gariepy.*

Q. Doctor, do you know anything about the ownership of the glass bottle and the quality of sand used in making the glass bottle?
A. No.
Q. Or the amount of lead salts used in making it?
A. No.
Q. Or any other chemical?
A. No.

Q. Do you have any occasion to check at a glass manufacturing company, such as Owens-Illinois, that supplies the glass for most of the bottles sold in the city of Chicago, as to how they make the bottles?

A. I never have.

Q. Has the United States Public Health Service suggested just exactly what you shall do with regard to glass bottles, in the matter of testing glass bottles for bacteria?

A. What is that?

Q. Has the United States Public Health Service suggested rules and regulations?

A. They have laid down specific regulations.

Q. Are you applying the same regulations with regard to the bacteria count per cc on the paper bottle as on the glass?

857 A. Yes.

Q. Is there any greater hazard in the paper than in the glass?

A. No.

Q. With the paraffin at 160 degrees or 170 degrees, what difference does it make with the bacteria count, if it is within the same limits?

A. We don't think there is any.

Q. Now, as to the matter of diseased employees operating in the paper mill, is there any difference between that and the diseased employee sticking his finger into a glass milk bottle?

A. That is even a greater hazard.

Q. And you know it is a common practice for the milk driver to pick a bottle up and put his finger into the bottle top and carry it that way.

Mr. Schaefer: Just a minute. I object to that.

Mr. Gariepy: It is the same thing, Master.

The Master: Objection sustained.

Mr. Gariepy: Q. Have you heard of any diseased employee working in the plant of the Cherry River Company or the Gardner-Richardson Company?

A. No.

Q. Have you any reason to suspect that they are hiring more employees who are diseased down there than the Bowman Dairy people or the Borden Company do when

858 they are bottling milk out in their glass bottling plants?

A. No, I have not.

Q. The conditions should be the same and they should have the same regard for public health?

A. I would expect it.

Q. Counsel asked you concerning conditions of unknown origin. Apparently he is referring to the fact with regard to the origin of the paper container. Are you acquainted with the origin of the paper container, what it is made out of, the raw material?

A. We are.

Q. Then there is not any unknown origin, is there?

A. No.

Q. Now, when you are talking about accepting somebody else's word concerning bacteria counts, do you accept from the city of Chicago certain counts with regard to the milk at certain pasteurizing plants or dairies?

A. We accept all of their inspection service in plants that operate in Chicago.

Q. Do you know of any reason why that should not be accepted?

A. No. It is perfectly acceptable to us. We feel it is up to standard.

859 Q. Is there any different basis in your accepting that than your accepting reports from Dr. Breed or Dr. Jordan, or anybody else, on the paper board?

A. No, we accept them on an equal basis.

Q. They are both there for the purpose of serving the same interest, that is, public health?

A. Yes.

Q. And the protection of the public health?

A. Yes.

Q. Have you had any reason to suspect any of the reports you have received concerning the disintegrated board, from Dr. Breed or Dr. Jordan, or anybody else, in relation to the Pure-Pak containers you have used since last year?

A. We have not.

Q. In the event you suspected, would you check it immediately as to the authenticity or the genuineness of the reports?

A. We would do our own testing.

Q. And if you found something wrong with the glass bottle and with the milk in the glass bottle, showing a high count, how would you check that?

A. We would stop the use of those bottles.

Q. And you do the same with the paper board?

A. Exactly.

860 Q. And that applies whether the United States Public Health Service has told you to do it by regulation or not?

A. That is true.

Q. That is just a matter of common practice with the Milk Sanitarium, is it not?

A. Yes.

Q. In regard to spots showing up on a piece of paper board, if you were suspicious as to whether those spots showed second-grade stock or not, how would you check that?

A. We would also do a test on that, a disintegration test.

Q. And if there were spots or little holes or spores on the inside of a glass milk bottle and you were suspicious as to whether or not that contained a dangerous bacteria, how would you check that?

A. We would dispose of the bottle.

The Master: Q. You would what?

A. Dispose of the bottle, throw it out of circulation.

Mr. Gariepy: Q. All of these regulations that you were asked about by Mr. Schaefer on cross examination, prescribed for the matter of control with regard to the quality of the milk and the sanitary condition of the milk, are 861 all for one purpose, are they not?

A. They are.

Q. And you can test as to whether the finished product is an acceptable container, concerning sanitation and sterility, by doing what?

A. Will you repeat that question, please?

Mr. Gariepy: Will you read that, Mr. Reporter?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. By doing the rinse test for containers.

Mr. Gariepy: Q. Is there any such thing as a uniform sanitary piece of glass used to make milk bottles with?

A. I don't think so.

The Master: You don't contend that glass itself is subject to—

Mr. Gariepy: Variations?

The Master: (Continuing.) —bacterial count?

Mr. Gariepy: Oh, yes.

The Master: The glass itself?

Mr. Gariepy: Q. Doctor, is there not a variation in the bacterial counts in glass bottles?

A. Yes, they often exceed the allowance, the maximum.

862 The Master: Q. No, I mean the material of which the glass bottle is made. That does not have any bacterial count, does it? You could not conduct a disintegration test on the glass itself, could you?

A. No, you could not.

Q. It is only something that happens on the surface, inside or out, that counts?

A. That is true.

Q. All of these questions about comparing paper with glass are beside the point, aren't they?

A. I feel that all the hazard involved is on the surface of either container.

Q. It is what?

A. That all the hazard involved is on the surface of either container.

Mr. Gariepy: Q. And both of them can be detected by the rinse test?

A. Yes.

Q. With the glass the rinse test and the disintegration test on the paper?

A. The rinse test on the paper.

Q. The rinse test on the paper?

A. Yes.

The Master: Q. In the case of glass bottles, the bacteria are on the surface of the glass?

A. That is true.

863 Q. In the case of the paper container, the bacteria may be on both the inner and outer surfaces of the paper container or in the paper itself?

A. The question is as to whether the bacteria that are in the paper itself ever come in contact with the milk?

Q. That is another question.

A. That is another question, yes.

Q. I am just talking about making tests.

A. Yes, there are two tests for the two different purposes.

Q. In the case of the paper container?

A. Yes.

Q. While in the case of glass there is only the one test?

A. The surface test.

Q. Which is a surface test?

A. Yes.

Mr. Gariepy: Q. And they are both accepted reliable tests used in the industry?

A. They are.

Q. Now, whether Dr. Jordan selects these samples, whether they are sent to him or not, does that make any difference as to whether you make a disintegration test and find a condition that shows an acceptable count, as standard?

A. I am willing to accept it that way as being a good, fair test.

Q. And if you were suspicious or not as to whether
864 there was connivance or collusion in handing in the proper report, you would test it?

A. Yes.

Q. By what?

A. By making a test, a proper test.

The Master: Q. Have you been doing that?

A. We have been doing it in the beginning, in running tests to determine that, and we found they were comparable with the other tests that we had, and we have not been doing it since.

Q. You mean you did some disintegration tests back in 1938, in December?

A. Yes.

Q. When you started out?

A. Yes.

Q. And the results you obtained from those tests, in your opinion, compared—

A. Favorably.

Q. (Continuing.) —favorably with those which you had reports of, namely, from Geneva?

A. That is right.

Mr. Gariepy: Q. Have you had any occasion to suspect that the reports you have been receiving from Dr. Jordan or from Geneva are not genuine?

A. We have not.

Q. And accurate reports, concerning the bacteria in the paper board?

A. We have not.

865 Q. And now, concerning hazards at a milk plant using the paper container as compared with hazards at a plant using the glass bottle, are you acquainted with

the number of operations employed in each of them in the filling process and so on?

A. Yes, I know what they go through.

Q. Are there less in the plant using the paper bottle than there are in the plant using the glass bottle?

A. I think there are.

Q. Have you in your experience since November, 1938, in checking the counts on the glass bottle, shown variations; have your tests shown variations in the counts from time to time?

A. That is true.

Q. And the same applies to the paper?

A. That is true.

Q. Is there anything in these tentative recommendations which Mr. Schaefer asked you about as being suggested by the United States Public Health Service that is not in accordance with the practice that you have adopted and followed since November, 1938, in order to safeguard public health, as applies to these paper bottles?

A. They are all parallel. There is some variation 866 in detail, the technique and so forth.

Q. What about the processes employed and the mechanical operations at the plant in filling the milk bottle, as compared with the number of operations and mechanical processes at a plant using the glass bottle, you having observed both of them?

A. The processes using the paper container are almost all of them automatic, in a greater degree than those using glass.

Q. Would that present more or less hazard with regard to public health?

A. Less hazard, I think.

Q. When does the human hand touch the paper container, after it has been received in blanks from the fabrication plant at the dairy, where the container is filled?

A. It is in feeding the operating machine.

Q. And after that does the human hand touch it at all?

A. It is entirely automatic after that.

Q. Is it not possible for the bottle caps, such as are used in the city of Chicago today, to be touched by the human hand in the filling process, on the glass bottle?

A. It should be automatic. If one is not operated automatically, it should be excluded.

The Master: Q. In other words, those caps are put
867 on by machine?

A. That is true.

Mr. Gariepy: Q. And is it just as possible for the man who puts those on the machine, who stands by and sees to the capping process as it goes around and operates, for him to be diseased, as it is the man at the end of the Ex-Cell-O machine filling the Pure-Pak container?

A. Surely.

The Master: Let us not go into that. That is argumentative.

Mr. Gariepy: He has been talking about disease and that stuff.

The Master: You don't have to have the witness testify to those things.

Mr. Gariepy: Q. Have you found any problems, Doctor, in the matter of the use of the paper container, since November, 1938, in these various suburbs that you represent, in performing tests and research work on, from time to time, that you felt you did not have absolute control of?

A. No.

Q. I ask you the same question with regard to the glass bottle.

A. Yes, the same.

868 Q. Have you had any less control over the paper bottle than you have over the glass bottle?

A. I don't think so.

Mr. Gariepy: That is all.

Recross Examination by Mr. Schaefer.

Q. Doctor, do you know the origin of these containers?

The Master: Which containers?

Mr. Schaefer: The paper containers.

The Witness: A. The Cherry River Company, I think, is the origin of them.

Mr. Schaefer: Q. How do you know that?

A. That is the source that is given in this report.

Q. What report?

A. That we got through Breed's office?

Q. You don't know of your own knowledge?

A. I have not observed it being made.

Q. You don't know of your own knowledge?

A. Not from observation.

Q. Do you know of your own knowledge whether any secondary stock is being used in the manufacture of that paper board?

A. Only such knowledge as is given us through these tests that might indicate it. There is no indication
869 of it.

Q. What tests might indicate it?

A. The quality of the pulp that is used and the type of organisms it might contain.

Q. What tests are you talking about?

A. Pulp.

Q. The disintegration test?

A. Yes.

Q. And now, how would a disintegration test reveal whether or not secondary stock was used in the manufacture of the paper board?

A. It would add certain colors, inks, and various other things to it.

Q. If the secondary stock had those colors?

A. If the secondary stock had those colors.

Q. And if it did not, how would a disintegration test reveal the use of secondary stock?

A. It might not, if this stock was perfectly clean and carried nothing with it.

Q. That is, a disintegration test might or might not reveal the use of secondary stock?

A. It might not.

Q. Do you know of your own knowledge what treatment is given to the water at the Cherry River Paper Mill?

A. I have not observed it.

Q. You don't know whether any treatment is given
870 to the water there?

A. No.

Q. Do you know whether or not that water contains B-coli before it is treated?

A. No, I do not.

Q. Do you think it is important?

A. It might have some bearing. Mildly important.

The Master: What is that?

The Witness: Mildly so. It is a remote hazard, I would say.

Mr. Schaefer: Q. You testified that in the case of glass bottles which gave a count beyond the permissible limits you would stop the use of those bottles. What else would you do?

A. Go back to the plant then and investigate the method of cleansing and see that it is properly carried out.

Q. How did you come to permit the use of paper containers in these municipalities, Doctor?

A. They made application. It became necessary for us to decide whether there was any reasonable ground upon which we could exclude them.

Q. What investigation did you make?

A. The investigation we made was going over the research work that had been done in connection with
871 that, particularly by Dr. Breed's committee and at the University of Illinois. We covered the literature on it. I sent an inspector to the University of Illinois, had him observe the processes that were used there, to determine the sanitary qualities of the milk containers. We went over the records that they had in connection with that, and later he and I went down there, and at one time Dr. Prucha, was up there and we covered it in detail through conferences, the sanitary hazards in regard to the paper.

I took it up with the other health officers of the other villages, in conference. We decided that there was no greater hazard involved in milk in paper containers than there was in glass containers, and we thought that we would be inconsistent by excluding paper containers.

Q. Whether inspection was made or not?

A. That is true.

Q. You said there were no significant variations between the tentative regulations under which you have been operating and the regulations which have been adopted by the United States Public Health Service?

A. There are some several variations in detail
872 there.

Q. What are they?

A. I can't remember all of them. There is this one in regard to the paraffin heating, the temperature of the paraffination.

Q. And the time?

A. The temperature and the time. I understand they advocate a lower count on the rinse test for the finished product. I don't think of any others at the present time. There are others, undoubtedly.

Q. As a matter of fact, they don't say anything about the rinse test at all, do they?

A. I don't know whether they do or not.

Q. You rely considerably on Dr. Sanborn and Dr. Breed?

A. I think very well of them.

Q. Would it influence your judgment if I were to tell you that Dr. Sanborn testified as follows; this is the question:

"Without knowledge and control of the bacteriological condition of the board, rinse tests conducted to determine the bacteriological condition of the finished containers are apt to be misleading?"

And the answer was:

"May be misleading, yes."

873 Then the next question:

"What do you mean by control of the board used, Doctor?"

And the answer:

"The methods used in controlling the bacterial content," meaning milk sanitation.

Does that influence the degree of reliance which you are willing to place on the rinse test?

A. I still think that for those of us who have laboratories that are not complete enough to do all the work that is possible, we will have to still depend upon certain tests of that kind for our own protection.

The Master: I do not quite understand that answer.

Q. You say you will have to rely on tests of that sort for your own protection?

A. Yes. I would still have to—

Q. Here a witness, Dr. Sanborn, says that the rinse test does not necessarily—

A. Tell the whole story?

Q. (Continuing.) —tell the whole story.

A. That is true.

Q. How were you being protected by a report as to a rinse test?

A. The rinse test is part of the report, and the most 874 important, in my estimation.

Q. Dr. Sanborn says that it is not controlling, though.

A. I don't think any of our tests are ultimately controlling. They are only relative.

The Master: Anything more, gentlemen?

Mr. Schaefer: One or two more questions.

Q. You are aware that the United States Public Health Service regulations contemplate compliance with certain

items of the present milk ordinance and regulations with respect to the cleaning, the lighting, the ventilation, the nature of the material from which the fillers are made, of which the walls are made, of which the ceilings are made, the buildings in which paper containers are made and converted, are you not?

A. I did not know how far the regulations are going on that. I haven't seen that yet.

Mr. Schaefer: That is all.

Further Redirect Examination by Mr. Gariepy.

Q. Doctor, if there is undesirable secondary stock in paper board, cannot that be shown by the disintegration test?

A. If it is carrying harmful bacteria, a disintegration test should show it.

875 Q. And this matter of recommendation or suggestion of the Public Health Service that Mr. Schaefer asked you about, as to a lower count in the paper container or paper board, is not that due to the fact that the paper is more susceptible to a lower count and thus a more severe test?

A. Possibly.

Q. With regard to these tests being only relative, does not that apply to the glass, as well as the paper?

A. It applies to every process of milk control.

Q. There is no set standard you can stick to and say that this is important and you have to measure up to that; they are all relative, are they not?

A. They are all relative.

Q. In regard to the source of the making of the paper container, about which Mr. Schaefer asked you and about which you answered, I asked you the same question regarding the source of the making of the glass bottle by the Owens-Illinois people. Now, have you ever been there and checked the making there?

A. I have not.

Q. That is, checked the making of the glass that goes into the bottle?

A. I have not.

876 Q. Have you any reason to suspect that in the paper mill where they make the paper board you would find unwholesome conditions existing, any more than there

should be unwholesome conditions existing in the glass factory where they make the glass bottle?

A. Equal hazards, perhaps.

The Master: I thought the witness said there is no problem at all in the glass.

Mr. Gariepy: I didn't hear him say anything about problem.

Q. Did you say anything about problems in glass?

A. I think our problems in glass are greater, from my limited experience so far, than those in paper.

The Master: Now, wait a minute.

Q. You said a little while ago that you did not have to conduct any disintegration tests on glass, that glass is glass and you do not have to go on the inside of it. Mr. Gariepy is asking you about conditions at the plant where the glass is made. After the glass is finished there is no problem any more, is there?

A. That problem is one of recontamination in the handling.

877 Q. After it is done?

A. After it is done, that is right.

Q. He is asking you before it is done?

A. Yes. I have no reason to suspect it at all.

Mr. Gariepy: Q. Have you any reason to suspect it at a paper mill?

A. There may be a greater hazard involved in the paper mill, but I don't think it is so great that it would be necessary to inspect it.

Q. Have you had any occasion during the past nine months or ten months, since you permitted the use of paper, after making this research and this check and reading the printed material and going to Urbana and investigating all there is on it and performing your own test, to think that you should go to the paper mill of the Cherry River Paper Company and check upon this board at this time, to guard the public health of Winnetka and these other villages?

A. There is nothing in our experience to indicate that that would be necessary.

Mr. Gariepy: That is all, Doctor.

878 *Further Recross Examination by Mr. Schaefer.*

Q. Glass is impervious, is it not, Doctor?
A. I beg your pardon?
Q. I say, glass is impervious, is it not?
A. Yes. That is, if the surface is continuous.
Q. So the conditions in the glass factory are entirely immaterial, because the bottle will be sterilized before it is used, isn't that true?
A. Yes, there will be an attempt at sterilization before it is used. There is no guaranteed uniformity. There may be sterilized bottles, but they are not uniformly sterile.
Q. They are not?
A. No.
Mr. Schaefer: That is all.

Further Redirect Examination by Mr. Gariepy.

Q. Is that the reason why you find a variation in the count from time to time?
A. Yes. The simple fact that the standard allowance is one bacteria per cubic centimeter, which would be around a thousand per each quart bottle, indicates there may be a large variation, even with the safeguards we try to maintain.

Q. And was not that standard employed and set up
879 before the paper bottle was given the extensive use it has today?
A. That is true.
Mr. Gariepy: That is all.
The Master: Is that all?
Mr. Gariepy: Is that all, Mr. Schaefer?
Mr. Schaefer: That is all, yes.
The Master: You may be excused.
(Witness excused.)
The Master: Now, you want to recall this witness?
Mr. Gariepy: I want to recall Mr. Taylor for a question or two.

CLINTON L. TAYLOR, recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. Your name is what?
A. Clinton L. Taylor.
Q. Mr. Taylor, have you heard the questions asked Dr. Orvis here concerning glass milk bottles, the making of glass milk bottles this afternoon?
A. I have.
880 Q. I ask you as a chemist, are all glass milk bottles made so that there is lead salts fused with the glass?
Mr. Schaefer: That is objected to as immaterial, obviously so.
Mr. Gariepy: You are talking about bacteria and bugs getting into the paper and second-grade stock and the contents of all of this stuff.
The Master: Off the record.
(Discussion had off the record.)
The Master: You may answer the question, if you wish.
The Witness: A. Glass bottles contain considerable lead salts.
Mr. Gariepy: Q. Are the lead salts in the printing ink that was testified to this morning by you as used on the Pure-Pak container, are they no more soluble in water than the lead salts in the glass milk bottle?
A. They are just the same.
The Master: What is that?
The Witness: I say they are just the same.
Mr. Gariepy: Q. The lead salts in the glass milk bottle that are used in producing and making the glass bottle are no more soluble than those used in the ink here?
881 A. We use ground glass as a pigment.
Mr. Gariepy: That is all.
The Master: Any questions, Mr. Schaefer?
Mr. Schaefer: No, sir.
The Master: That is all.
(Witness excused.)
The Master: Anything else?
Mr. Gariepy: I proposed to put on Dr. Woodman, until that message came this morning.

Mr. Schaefer: Is that all you have for today then?

Mr. Gariepy: Yes.

The Master: Off the record.

(Discussion had off the record.)

The Master: Let the record show that this hearing will be continued on next Tuesday at ten o'clock, September 12th.

Whereupon the further hearing of the above entitled cause was continued to Tuesday, September 12, 1939, at 10 o'clock a. m.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

I, Kenneth J. Carrick, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages contain a true copy of Volume 1 of the printed record, printed under my supervision, and filed on the twenty-first day of February, 1941, which, together with Volumes 2 and 3, constitutes the record in the following entitled cause:

Cause No. 7502.

Fieldcrest Dairies (Inc.),
Plaintiff-Appellee,

vs.

City of Chicago (a Municipal Corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Defendants-Appellants,

as the same remains upon the files and records of the United States Circuit Court of Appeals for the Seventh Circuit.

In Testimony Whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this 5th day of September, A. D. 1941.

Kenneth J. Carrick,
(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*

Vol. II

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1941

No. 706

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, ET AL., PETITIONERS,

vs.

FIELDCREST DAIRIES, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

PETITION FOR CERTIORARI FILED OCTOBER 20, 1941.

CERTIORARI GRANTED NOVEMBER 24, 1941.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

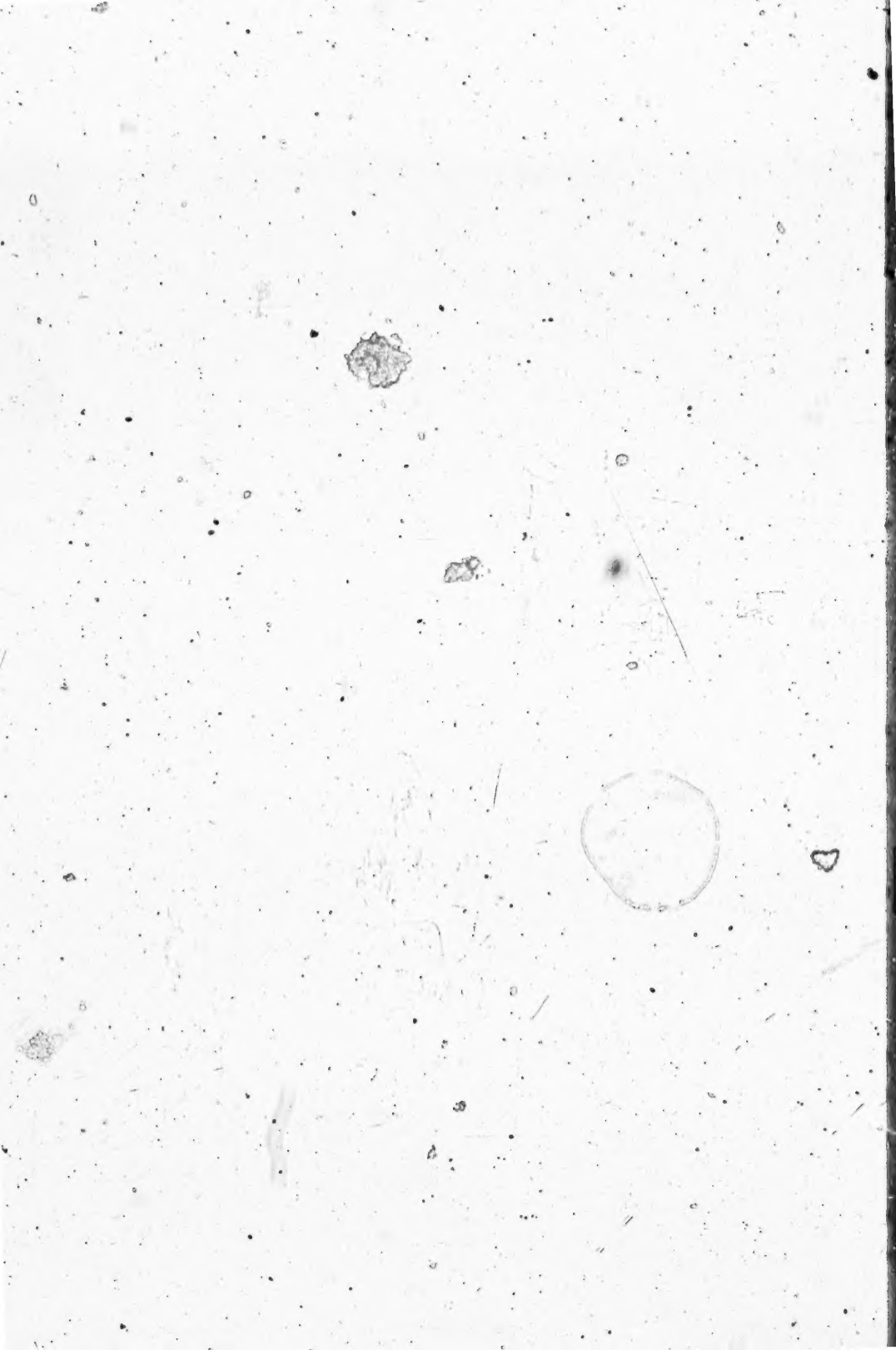
Petitioners,

vs.

FIELDCREST DAIRIES, (INC.),

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.



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IN THE

United States Circuit Court of Appeals
For the Seventh Circuit

No. 7502

FIELDCREST DAIRIES, (Inc.),

Plaintiff-Appellee,

vs.

CITY OF CHICAGO, (A Municipal Corporation), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,

Defendants-Appellants.

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

TRANSCRIPT OF RECORD FILED JAN. 20, 1941.

IN THE

United States Circuit Court of Appeals
For the Seventh Circuit

No. 7502

FIELDCREST DAIRIES, (INC.),
Plaintiff-Appellee,

vs.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO; DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,
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882 • • (Caption) • •

Tuesday, September 12, 1939,
10 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall.

Mr. Schaefer, Mr. Horan.

883 Mr. Gariepy: If the Master please, there has been considerable talk with regard to the United States Public Health Service rules and regulations and suggestions pertaining to milk control, tests and standards. I would like, for the purpose of clarifying the record concerning the position of the United States Public Health Service, to ask counsel for the City whether they will stipulate that any work of said body, the United States Public Health Service, or the advisory board thereof, is merely advisory work and is not regulatory or mandatory upon any city or municipal authorities or board of health thereof.

The Master: That is the fact, is it not, Mr. Schaefer?

Mr. Schaefer: That is the fact, yes.

Mr. Gariepy: Purely advisory.

The Master: Off the record.

(Discussion off the record.)

Mr. Gariepy: I think we ought to have that clear, that all questions concerning any meetings the board has had or any recommendations the board has made are merely standards and suggestions and do not bind the plaintiff or the City of Chicago in this case.

I would like to call Dr. Arnold to the stand. Take the stand, Doctor, please.

884 Mr. Schaefer: On what ground or principle?

Mr. Gariepy: I have the right to call any witness in the court room that I want to call, who is present.

Mr. Schaefer: I object to their calling Dr. Arnold.

Mr. Gariepy: What is the ground of the objection?

Mr. Schaefer: Dr. Arnold will testify in this case. Dr. Arnold will testify when I put him on.

The Master: I thought you had some other witnesses you were going to put on today, Mr. Gariepy.

Mr. Gariepy: I do, and I have got the witnesses, and we will be here all day, but I want to start out by saving a lot of time, thereby honoring the Master's suggestion of keeping the record down, by identifying certain records.

The Master: You are entitled to call him as a witness.

Mr. Schaefer: We will be here all week. It is all right with me, if you want to do it this way.

The Master: Off the record again, please.

(Further discussion off the record.)

The Master: You may call him, if you wish.

Mr. Schaefer: I don't think Dr. Arnold has been sworn as yet.

Mr. Gariepy: All right.

885 LLOYD ARNOLD, called as a witness on behalf of the plaintiffs, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name.

A. Lloyd Arnold.

Q. Your address?

A. 5844 Stony Island.

Q. What is your business or occupation?

A. Professor of bacteriology and public health at the University of Illinois, College of Medicine.

Q. And how long have you been such?

A. About fifteen years.

Q. Are you a member of the Board of Health of the City of Chicago?

A. Yes, sir.

Q. Were you such in the year 1937?

A. No, sir.

Q. Doctor, I show you a book or pamphlet marked April 27, 1939, as Plaintiffs' Exhibit 4, which was so marked when the deposition was taken. Will you look at that and tell me whether you ever saw it before? (Handing document to the witness.)

A. Yes, sir.

Q. Who prepared it?

A. I prepared this.

Q. Does that bear your signature?

A. Yes, sir.

886 Q. Did you hand Plaintiff's Exhibit 4 or deliver Plaintiff's Exhibit 4 to Dr. Herman Bundesen, then president of the Board of Health of the City of Chicago, in the year 1937, on or about December 4th?

Mr. Schaefer: That is objected to as immaterial, if the Master please.

The Master: What is this supposed to be? A report to Dr. Herman N. Bundesen by Dr. Lloyd Arnold, on a single package fabricated paraffined paper container for fresh fluid pasteurized milk, December 4, 1937. I will overrule the objection. He may answer.

The Witness: A. I gave it to Mr. Krueger of the Board of Health.

Mr. Gariepy: Q. And what is his position there, or office?

A. I think he is in charge of the dairy division.

Q. Did you ever deliver the same exhibit, No. 4, to Dr. Herman Bundesen?

A. I talked to Dr. Bundesen about it. I don't know whether he has seen it or not.

Q. For whom did you prepare said report, Plaintiff's Exhibit 4?

A. For a Mr. Scott of the Ex-Cell-O Corporation.

Q. And over what period of time were you preparing it?

887 A. I think about a month or two months, not more than a month, hardly, as I remember it.

Q. Were you paid for your services in securing the data, in preparing that?

A. Yes, sir.

Q. And how much?

A. I think it was $250.

Q. By whom?

A. By the Ex-Cell-O Corporation, Mr. Scott.

Q. During the month of August, 1939, did you or any member of the Board of Health of the City of Chicago attend a meeting of the advisory board of the United States Public Health Service at Minneapolis?

Mr. Schaefer: That is objected to, if the Master please.

The Master: It is preliminary. I will let him answer.

The Witness: A. I do not know of any advisory board meeting at that time.

Mr. Gariepy: Q. Do you know of any meeting of the advisory board during the month of August or July, 1939?

Mr. Schaefer: This is the advisory board of the United States Public Health Service?

Mr. Gariepy: This is the advisory board of the United States Public Health Service, that you mentioned the other day, when Dr. Orvis was on the witness stand. You said they had recently promulgated some rules and
888 regulations that were new.

The Witness: A. There was a meeting either in June or July—I don't know just when it was—this year.

Mr. Gariepy: Q. Where?

A. In Washington, D. C.

Q. Did you attend?

A. No, sir.

Q. Did any member of the Board of Health of the City of Chicago attend, that you know of?

A. Well, Mr. Krueger is on the advisory board, but not as a member, as connected with the Board of Health.

Q. The question is, did he attend?

A. He attended, yes, sir.

Q. What date was that?

A. I don't recall the date.

Mr. Gariepy: That is all, Doctor.

The Master: Any cross?

Mr. Schaefer: I would like to look at that exhibit, first, please.

The Master: Yes.

Mr. Schaefer: No cross-examination.

Mr. Gariepy: That is all, Doctor.

(Witness excused.)

Mr. Gariepy: Mr. Scott.

889 GEORGE D. SCOTT, called as a witness on behalf of the plaintiff, having first been duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name.

A. George D. Scott.

Q. And your address.

A. 1200 Oakland Boulevard, Detroit, Michigan.

Q. What is your business?

A. The manufacture of the Pure-Pak machine for single service containers.

Q. And what is your capacity with the Ex-Cell-O Company?

A. National sales manager for the Pure-Pak division.

Q. How long have you been such?

A. Three years.

Q. What are your duties?

A. To supervise sales of the branch sales offices throughout the country and to conduct our advertising division.

Q. Are you acquainted with the places, cities and villages in the United States wherein your product, the Pure-Pak container, is being used for the sale of fresh fluid milk, at this time?

A. Yes, sir.

Q. How many cities and villages are using said Pure-Pak container?

890 Mr. Schaefer: If the Master please, I object to that. The first time we went into that you reserved your ruling on materiality. We have been into it now some ten or fifteen times during the entire progress of the case. There is no particular advantage served by going into it again.

The Master: Oh, I will let him answer.

The Witness: A. We are in the principal cities throughout the United States.

Mr. Gariepy: Q. Name them.

A. New York City; Philadelphia, Pennsylvania; Baltimore, Maryland; Washington, D. C.; Dayton, Ohio; Indianapolis, Indiana; Detroit, Michigan; Minneapolis, Minnesota; Seattle, Washington; Los Angeles, California; San Francisco, California; Oakland, California; Phoenix, Arizona; Flint, Michigan; Louisville, Kentucky; are among the cities that we are in.

Q. How many cities and villages, do you know, are using it?

A. According to a personal survey of mine, four hundred and eighty-one at this time.

Q. And approximately how many Pure-Pak containers are being sold daily?

A. Between three and four hundred thousand.

Q. Have you had occasion during the past three
891 years to make contact with the New York experimental station at Geneva, New York?

A. Yes, sir.

Q. Have you had occasion during the past three years to meet Dr. Arnold and members of the Board of Health of the City of Chicago?

A. Yes, sir.

Q. When did you first meet members of the Board of Health of the City of Chicago, with regard to the use of the Pure-Pak container in the city of Chicago?

Mr. Schaefer: That is objected to as immaterial, if the Master please.

The Master: Overruled.

The Witness: A. I first met Mr. Paul Krueger, I would say, in the last ten days of October, 1937.

Mr. Gariepy: Q. Is he an employee of the Board of Health?

A. I understand he at that time was the chief of the milk division of the Department of Health.

Q. What was the purpose and object of your meeting him at that time?

A. Well, I wanted to discuss with Mr. Krueger the possibility of obtaining a permit for allowing our machines to operate here in the city of Chicago.

892 Q. And distributing the Pure-Pak container?

A. Yes.

Q. And was that the occasion for your contacting the New York experimental station at Geneva?

A. No, sir. The New York experimental station had been contacted before that time.

Q. Have you met Dr. Arnold, who testified here a minute ago?

A. Yes.

Q. What was the occasion of your meeting Dr. Arnold?

A. In a conference with Mr. Krueger—

The Master: Q. When?

A. This same conference, Master, in the last ten days of October, 1937.

Mr. Gariepy: Q. Proceed.

A. (Continuing) —I ask Mr. Krueger what he thought of our efforts with the Breed-Sanborn group in Geneva, New York, and Mr. Krueger replied that while he had a lot of respect for the gentlemen in the New York State

Agricultural Experimental Station, they were too far away from Chicago to work as close with the Chicago Board of Health as they would like to have them work, and for that reason he recommended that it would be helpful to us if we would contact someone locally to carry on this work for us.

893 Q. Did he name the person to contact?

A. Yes, he did.

Q. Who was it?

A. He told me to get in touch with Dr. Lloyd A. Arnold.

Q. And did you do so?

A. Yes.

Q. How long after you had this conversation with Mr. Krueger did you contact Dr. Arnold here?

A. As I recall, it was the same day.

Q. And where did you see him?

A. At his offices on West Polk street.

Q. What happened at that meeting between you and Dr. Arnold in securing data for the matter of the Pure-Pak container and its use in the city of Chicago?

A. Well, I told Dr. Arnold—I had never met Dr. Arnold before, and upon meeting him in his offices there on West Polk street I told him I had been to see Mr. Krueger that morning and that Mr. Krueger had told me that Dr. Arnold had been doing research work for the Chicago Board of Health for a great many years and that they had every confidence in the world in the type of work that had been done by Dr. Arnold, and that if we could get Dr. Arnold to carry on this research work for us he felt there would be no difficulty in finally establishing a permit for us to

894 operate in Chicago.

Q. Did you engage Dr. Arnold to do the work?

A. Yes, sir.

Q. Was there any fee agreed upon for the services to be rendered?

A. Yes, sir.

Q. How much was it?

A. Dr. Arnold thought that it would require about three months to complete his work and that it ought to be worth about a thousand dollars.

Q. Did you agree to pay him a thousand dollars?

A. Yes.

Q. Did you immediately afterwards aid him in the mat-

ter of securing data for the preparation of a report which I show you, marked as Plaintiff's Exhibit 4 here?

A. Yes, sir, I did.

Q. And where did you next meet him, after meeting him at Polk street at his office?

A. I next met Dr. Arnold, by agreement by telephone between ourselves, at the New York State Agricultural College at Geneva, New York.

Q. And how long were you there with him?

A. All day.

Q. Gathering data?

A. Yes.

Q. And who did you see there and discuss this mat-
895 ter with?

A. Dr. Arnold and myself and Dr. Breed, director of the experimental station, and Dr. Sanborn, were the principal people.

Q. Where did you go after that?

A. After discussing the situation all day there in Geneva, Dr. Arnold thought that it would be well if we had all—

Q. Did he say so?

A. Yes. Dr. Arnold told me that he would like to have all the data that he could get from the board source, from the board mill, which was located in Richmond, West Virginia.

Q. Did you go there?

A. Yes, sir.

Q. How long did you stay there with Dr. Arnold?

A. No, Dr. Arnold did not go to the board mill with me. Dr. Sanborn went with me as a technician, to pick up the required samples.

Q. Where next did you go with Dr. Arnold?

A. After completing the samples, Dr. Sanborn took them back to Geneva for the carrying out of the bacterial work. I next met Dr. Arnold in Detroit.

Q. What did he do in Detroit in regard to securing data for the Board of Health?

A. Dr. Arnold called me on the phone, or else I called
Dr. Arnold on the phone, and he told me it would be
896 very beneficial to come to Detroit and get all of the details surrounding the manufacture of the equipment and visit with our own department of health and obtain their first hand experience, since they had been working directly with Pure-Pak for a couple of years in that city.

Q. Did you make contact with your board of health in Detroit for Dr. Arnold, to give him this data?

A. Yes.

Q. And how many days was he in Detroit doing this work?

A. I believe two days.

Q. Where did he next go, if you know?

A. A few days following our conference in Detroit, Dr. Arnold called me on the telephone at our Detroit offices and asked me to come to Chicago, that his work was progressing well, and that there were only two or three other holes that he could see that needed plugging and that he wished to inspect the carton converting plant here in Chicago, where the container blanks were converted from the board.

Q. What was the name of that company, Doctor?

A. The Chicago Carton Converting Company, located in the southwest section of Chicago somewhere. I don't know just exactly where.

897 Q. Did you go out there with him?

A. Yes.

Q. Did you make an inspection there with Dr. Arnold?

A. Dr. Arnold, Mr. Livingston, Mr. Dean, Sr., and I believe Mr. Dean, Jr., all went out there with us.

Q. Then what further contact did you have with Dr. Arnold concerning further data for this report?

A. After leaving the Chicago Carton Converting Company, Dr. Arnold wanted to see the Dean milk plant, so there could be no possible objection as to the construction of the milk plant, and we went out there.

Q. Where was that plant located?

A. I believe it is on Fulton street. I am not very familiar with that particular section.

Q. Just out of the loop here?

A. Yes.

Q. And then after that did you have further contact with him and further data for this report.

A. My next recollection is that Dr. Arnold asked me to come to Chicago for the purpose of simply going over the data that had been compiled, to see whether or not there were any comments or possible suggestions along the method of presentation, and I did come to Chicago and talk with Dr. Arnold about the situation. I believe it was in my hotel room at the Palmer House.

898 Q. What date was that, approximately?

A. I would say that was about the first or second of December, 1937.

Q. December, 1937?

A. Yes.

Q. Did you ever see this Plaintiff's Exhibit 4 before?

A. Yes, sir.

Q. Where did you see it the first time?

A. The first time I saw it, I believe, was at the conference in the hotel room, prior to Dr. Arnold taking it to the Board of Health.

Q. Did you see him after he had taken it to the Board of Health, or reported to you that he had?

A. Not immediately. From my hotel room Dr. Arnold called Dr. Bundesen's office for an appointment, and did not get the appointment at that time, and he asked me to return to Detroit and that he would make the appointment within the next day or two and call me on long distance in Detroit. During this same conference at the Palmer House, Dr. Arnold felt that this was sufficient data to—

Q. Did he say this? Not what he felt.

A. Yes, he told me he thought this was sufficient data to obtain a permit, and, in fact, Dr. Arnold asked me in what form we would like to have the permit, I mean,
899 whether it should be in letter form, and I replied to Dr. Arnold that it did not make any difference to us, that whatever was the standard accepted form we would be glad to have.

Q. When did you next hear from him after that?

A. I believe it was on a Saturday, at 12 noon, he asked me to be at my office in Detroit, at which time he would call me and give me the results of his conference with Dr. Bundesen's office.

Q. Did he call you in Detroit on that Saturday at noon?

A. Yes, sir, he did.

Q. And did he tell you of his conference with Dr. Bundesen?

A. Yes, he did.

Q. Did he give you the permit or say he had a permit?

A. No. He said that he was not able to get a permit and that he did not understand the situation; as a matter of fact, he told me he had never taken such a lashing from anybody in his life as he had taken from Dr. Bundesen, because he had proceeded with the gathering of this data

on behalf of Pure-Pak without first consulting Dr. Bundesen personally.

Q. Subsequent to 1937 did you have occasion to see the president of the Board of Health, Dr. Black, in the year of 1939, concerning the use of the Pure-Pak container in
900 the city of Chicago?

A. Dr. Black, yes, sir, I did.

Q. And when was that that you saw Dr. Black?

A. Just a minute, please. About two weeks prior to January 11th. I realize that is perhaps an odd answer, but I have January 11th definitely fixed in my mind. It was two weeks prior to January 11th.

Q. Where was this meeting with Dr. Black?

A. In Dr. Black's office here in Chicago.

The Master: What year was this?

Mr. Gariepy: 1939.

Q. Who was present at that time, Mr. Scott?

A. Dr. Black, and, I believe the gentleman's name is Major Conley or Major Courtney.

Mr. Schaefer: Conway.

The Witness: Conway, yes, Major Conway.

The Master: Q. Where was this meeting?

A. In Dr. Black's office here in the city hall, sir.

Q. At the Board of Health?

A. At the Board of Health, yes.

Mr. Gariepy: Q. Did you have a conversation with him then concerning the Fieldcrest Dairies using the Pure-Pak container and your container being used?

A. Yes, sir, I did.

901 Q. What did you say to him concerning the permit for the use or why you could not use it and so on?

A. I told Dr. Black that I had not had the opportunity of meeting him personally before and that in my opinion, as a member of the board, perhaps he had not been advised of all of the situation concerning this thing and all of our efforts over a period of months, and I would like the opportunity of presenting to him personally some of the situation that we had gone through, in order to satisfy the Board of Health, and he said he did not know whether he had heard all the story, but he would be glad to hear it from me personally.

When I finished the conversation with him, or near the close of the conversation, Dr. Black said that he felt it was an unfortunate situation and that he would do something

about it, that the Ex-Cell-O Corporation had been extremely patient.

The Master: Had been what?

The Witness: Extremely patient.

Mr. Schaefer: I am sorry; I missed a part of that answer. May I have the answer read back, please?

(The witness'' answer was read by the reporter as above recorded.)

902 The Witness: A. (Continuing.) Dr. Black further stated that this was one of the major problems that he had aired since becoming acting president of the Board of Health and that he certainly would make an investigation and that we would get some action and it would not take him two years to do it, and he asked me to come to his office about two weeks later for another conference.

Mr. Gariepy: Q. Did you do so?

A. Yes, sir.

Q. And was the next conference at his office, at the same place?

A. Yes, sir, at the same office.

Q. And who was present then?

A. In my sight there was Major Black—Dr. Black, pardon me—Major Conway, Mr. Sam Dean, Sr., Dr. Arnold, and Mr. Paul Krueger.

Q. And what did Mr. Black say to you on that occasion concerning the use of the Pure-Pak container in the city of Chicago?

A. Dr. Black said that in the meantime he had been so busy that he had not been able to give the situation but very little thought, but the thought that he had given it had convinced him that he did not want to plunge off the end of the board into this situation and that so far as

903 he was concerned at that time no permit would be granted.

Q. And what did you say to him?

A. Well, I asked Dr. Black whether or not he had any personal objections to the distribution of milk in Pure-Pak containers in the city of Chicago.

Dr. Black replied no, he did not have any personal objections.

Then I asked Dr. Black, if he had no personal objections what was the objection of the board based upon, and he said that he thought that it could not be properly distributed under the present Chicago ordinance.

I told him that we had checked the ordinance many, many times and that in our opinion the ordinance was in no way antagonistic or unfriendly to the single service containers, because they were simply not mentioned, and since it was a matter of opinion on his part that they could not be used and an opinion on our part that they could be used, I asked Dr. Black on the basis that he himself had no personal objections would he mind if we called in a referee, say one of the federal judges in Chicago, to read briefs and decide whether or not the containers could properly be used under the present ordinance.

904 Q. What did he reply?

A. Dr. Black replied that he would have strenuous objections to any such action as that on our part.

Q. Did you have any further conversation with him at that time about securing a permit?

A. I asked Dr. Black if there was anything in the world that we could do, to work with him in any way toward the end of coming in and doing business in the city, and he said yes, there was one thing we could do. I asked him what it was, and he said we should get the data approved by the United States Public Health Service, and I told Dr. Black we certainly would try to do that, and I asked him directly if I should go to Washington and obtain a permit or obtain the approval of the United States Public Health Service for the distribution of Pure-Pak Containers in Chicago, whether or not he would then issue us a permit to begin our operations.

Q. What did he reply to that, if anything?

A. Dr. Black replied that he would not give us a permit, even though it were approved by the United States Public Health Service.

Q. This conversation and these requests were all made on behalf of Fieldcrest Dairies, of which Mr. Dean is

905 president?

A. Yes, sir.

Q. With whom you had a license agreement at that time for the sale of Pure-Pak containers and the use of your machine?

A. Yes.

Q. Have you heard from Dr. Arnold at any time since December, 1937, concerning this report or the permit that he discussed with you that month?

A. Yes, I had a letter from Dr. Arnold regarding the permit.

Q. What year was that?

A. The letter is in the file, I believe, Mr. Gariepy. I don't recall the date at the minute.

Q. Was it in 1937?

A. I don't believe it was. I believe it was in 1938.

Q. From 1937, when Dr. Arnold finished this report, Plaintiff's Exhibit 4, up until the time you saw Dr. Black in January of 1939, what was done with regard to securing statistical data and research data at the University of Illinois?

A. Well, in February—

Mr. Schaefer: That is objected to, on the ground the witness cannot know.

906 The Master: Do you know?

Mr. Gariepy: Q. Do you know this?

A. Yes, I know of a lot of work we did there, Master.

The Master: Go ahead. Tell us what you know and not what you heard.

The Witness: A. All right, sir. In February, 1939, we shipped a machine to the University of Illinois—1937, February, 1937, we shipped a machine to the University of Illinois, in order that they might make all of the practical and sanitary and bacterial examinations on our equipment in their own place.

Mr. Gariepy: Q. And what department or what men were to work on this machine and perform this research work?

A. Dr. Tracy was to work on the practical application of the equipment in an actual dairy plant and Dr. M. J. Prucha was to work upon the bacterial end of the experiments.

Q. Was there any subsidizing of these two men in any form, shape or manner, in regard to the research work to be carried on with that machine at the university?

A. No, sir.

Q. Did you people ever pay them any money at all?

A. I don't think so.

907 Q. To secure any type of reports, favorable or unfavorable?

A. No, sir.

Q. Have you had any contacts with them in the way of contracting for services in advance at any time from February up to this time?

A. Never at any time.

Q. Did you people do anything with regard to checking up on their reports from time to time, to see whether they were favorable or unfavorable with regard to the Pure-Pak container?

A. Yes, at various meetings and general conventions held at the university I have attended myself, with associates of my company, and naturally at that time we have asked for reports and checked upon the progress of the experiments.

Q. And was there any charge made for the machine sent down there?

A. No, sir.

Q. And at whose suggestion was the machine sent there for this experimental and research work?

A. Mr. Sam Dean, Sr., suggested that we send the machine there.

Q. Mr. Scott, do you know of the villages and cities where the Pure-Pak is being sold now, and approxi-
908 mately how many of them are operating under this code called the United States Public Health Service ordinance?

Mr. Schaefer: That is objected to.

Mr. Gariepy: I asked him if he knew.

The Master: He may answer.

The Witness: A. Yes, sir, I do know.

Mr. Gariepy: Q. How many?

Mr. Schaefer: Objection.

The Master: Overruled.

The Witness: A. Three.

Mr. Gariepy: Q. Name them.

A. Louisville, Kentucky, Seattle, Washington, Phoenix, Arizona.

The Master: What is the last one?

The Witness: I said Phoenix, Arizona.

Mr. Gariepy: Q. Do you know Mr. Leslie Frank, a member of the United States Public Health Service Department at Washington, D. C.?

A. Yes, sir, I do.

Q. Do you know—I think it is Colonel Bush or Major Bush?

A. No, I have not met that gentleman.

Q. Have you been in contact with the United
909 States Public Health Service with regard to the use of the Pure Pak container and any rules and regulations that may be promulgated by said department?

A. Yes, sir, I have.

Q. Do you know of any rule or regulation issued by that department during the past three years, from the time you have been with the company, which restricts or prohibits by way of suggestion the use of the single service container for the sale of Grade A milk in a city or village?

A. No, sir, I do not.

Mr. Gariepy: Take the witness, Mr. Schaefer.

Mr. Schaefer: No cross examination.

Mr. Gariepy: You may be excused, Mr. Scott.

(Witness excused.)

Mr. Gariepy: Dr. Prucha.

MARTIN JOHN PRUCHA, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, Doctor?

A. Martin John Prucha.

910 Q. Where do you live?

A. 702 West Nevada street, Urbana, Illinois.

Q. What is your business and occupation?

A. I am a teacher and carry on research work.

Q. Connected with what organization or body or school or laboratory?

A. I am connected as a teacher with the College of Agriculture at the University of Illinois and as a research man I am connected with the Agricultural Experimental Station of the same institution.

Q. How long have you been such?

A. I came to Illinois in 1913. I have been there ever since.

Q. What degrees do you have from schools and colleges?

A. I received my Bachelor of Philosophy degree in 1903 from the Wesleyan University at Middletown, Connecticut. I received a Master's degree at the same institution in 1908 and received a Doctor of Philosophy degree in 1913 from Cornell University, Ithaca, New York.

Q. From 1903 to 1910 what work were you engaged in?

A. I was employed as bacteriologist in the New York Agricultural Experimental Station.

Q. And from 1910 to 1911 what were you doing?

A. In 1910 and 1911 I held a university fellowship at Cornell University, doing graduate work.

911 Q. Since 1913 what has been your office at the University of Illinois?

A. I became an assistant professor, the same position I held at Cornell before I left there, first, and then an associate professor, and then a full professor later on in the college. Then in the agricultural experimental station I became assistant chief, and finally in 1920 its chief in research, in my field in the experimental station.

Q. That is the Illinois Agricultural Experimental Station?

A. Yes.

Q. Who pays your salary, Doctor, for the work you are doing there in the research in the Illinois Agricultural Experimental Station and on the staff?

A. About half of my salary comes, of course, from the state funds, from taxation, from the budget of the university, and the other half comes from federal government money, from the Hatch, I believe, and Adams acts.

Q. How long have you been receiving some money from the federal government under the Hatch Act and Adams Act.

A. Since 1913.

Q. What courses do you teach at the University of Illinois?

912 A. I teach elementary dairy bacteriology, which essentially is dairy sanitation, a lecture course and a laboratory course in the same field, and under my direction is given another advance course in the same field, and I am giving two graduate courses leading towards Doctor's degrees for the students.

Q. Do you do work for boards of health of cities and municipalities?

A. Well, I am not employed as such, but I have been asked a good many times questions and have as a result of their suggestions taken up experimental work.

Q. Have you done work for the city of Chicago?

A. Yes.

Q. The Board of Health?

A. Yes.

Q. When?

A. Both in regard to—I have been here on two different occasions giving talks to the inspectors.

Q. Of the Chicago Board of Health?

A. Yes. Then a year ago last spring early I had a letter from Dr. Bundesen, asking if I could devote some time to research work in the matter of pasteurization, the introduction of this machine called heat exchanger or short time high temperature, that was coming up, and Dr. Bundesen and the Board of Health were not quite certain about certain problems, so they asked me and asked
913 Professor Parfitt of Purdue to come up and see if we could carry on some experiments on the subject, to help them settle the matter.

Q. Are you a member of the International Association of Milk Sanitarians?

A. Yes.

Q. And also of the Dairy Science Association?

A. Yes.

Q. And the American Public Health Association?

A. Yes.

Q. And how long have you been such?

A. I don't know. It would be years, a period of years.

Q. Have you written any scientific articles on bacteria, especially with regard to milk products and milk control?

A. That is my specialty and practically all of the publications I put out are dealing with certain phases of it.

Q. How many of them have you put out?

A. I am sorry, but I have not taken the time to count them.

Q. Approximately?

A. Oh, I should say they might be over a hundred, something like that. I don't know. I do not even have a reference to some of them.

914 Q. Have you made a scientific and laboratory analysis and study of the sanitary aspects of paper milk containers?

A. Yes.

Q. And how many years have you made that study and done that work?

A. We started in February, 1937.

Q. At whose suggestion was that work started?

A. I can't exactly give you information on that, because the transactions happen to be done through Professor Tracy. It was the same problem that Mr. Scott referred to when he said a machine was sent down to us.

Q. Did Mr. Scott suggest the undertaking of this study and this research work, or did you and Dr. Tracy?

A. We decided that.

Q. The two of you?

A. Yes. We felt that this was a new problem in the dairy industry coming on, and that we, being responsible to the consumers, trying to be of help to the board of health and to the dairy industry, that we ought to go into the matter and study it and supply information, if we could get it.

Q. Did you have other machines, other than the Ex-Cell-O machine, down there?

915 A. Yes.

Q. To conduct your research work on?

A. Yes.

Q. What other machines did you have?

A. We had the American Can machine. The two machines were on the floor at the same time. And then we used the Sealrite container also. Those three different containers we used in our study.

Q. All three of them?

A. Yes.

Q. Pure-Pak, American Can, and Sealrite?

A. Yes.

Q. Who financed this study, Doctor, of the sanitary aspects of the paper milk container?

A. As I said before, personally I was responsible for that work and I spent a lot of time on it, and my salary, of course, came from the state and federal government funds. The facility for the work was offered by the companies, by supplying us with the machines, installing the machines and supplying us with the containers.

Q. Is this study a project of the department of dairy husbandry of the University of Illinois?

Q. What do you mean when you say it is a project 916 of theirs?

A. In a public institution of that kind we have a set-up that any new study must be o.k.'d. I use the word "o.k."

Q. That is all right.

A. It is not a good word.

Q. Go ahead.

A. Must be approved by the head of the department, by the director of the experimental station and, of course, by the authorities of the university. So, of course, when

we plan any new study, in my case, for example, I outline the project, what we would like to do, what our plans are, the method of study, how much it will cost, how long it will take, and present it to the head of the department.

Then the head of the department studies it, and if he agrees with it he takes it up with the director and dean of the college, and that is discussed, and when finally authority and seal is put on it, it comes back to us.

Q. Then it is a project of the university?

A. Then it becomes a project of the university, yes.

Q. Describe the nature of these investigations and experiments that you say you conducted under this project.

A. Professor Tracy, of course, took responsibility
917 for the study in the plant, the plant study, practical study, dealing with the bottling and all of those problems, and my responsibility was to study the bacteriology, the sanitation of the whole problem.

Q. What did you do in your study of the sanitary aspects of the Pure-Pak containers?

A. I felt myself that it is advisable when we go into it and it is a new field, that we should start right from the beginning. So we started right with the paper mill, to some extent. We did not make too elaborate a study of the paper mill, only enough to see what the sanitary condition, bacteriology, of paper making is, where contamination may come, with the idea of suggesting to the mill changes, if need be.

Q. Did Fieldcrest Dairies or Mr. Scott or the Ex-Cell-O Corporation pay your time and services going to the mills, making this check-up?

A. The question came up that if we do this study we have to go to the mill. I went to the head of the department and I told the head of the department that this is a study where I want the department to pay the traveling expenses to the mill and back. He replied, "I have no money in the budget." I said that of course I prefer to have de-
partment money, but the companies all three companies
918 are offering to pay us the traveling expenses. He said it is all right with the department if I accept the traveling expenses.

Q. Did you do that?

A. Yes.

Q. Did you receive any compensation, other than traveling expenses?

A. No, no compensation.
Q. At any time?
A. No, sir.
Q. From any of the three companies?
A. No, sir. I did not want that.
Q. Will you tell the Master the tests you made and the detail of your study on the sanitary quality of the paper and the methods that were used in determining the manner of sterility?
A. The laboratory methods that were used—of course, fundamentally we were determining the number of bacteria along the road and in the containers and to some extent we also studied the type of bacteria when we found any.
Q. What test did you make to ascertain the type and the amount?
A. We went in the paper mill, for example.
The Master: In what?
A. Into the paper mill, and we took samples and took equipment with us, necessary equipment with us, and
919 used the laboratories, and took samples of the water that they use for diluting pulp. We took samples of the pulp along the road, the path of the travel. We took samples any place we could think of, and finally we took samples of the finished product of the paper in the paper mill.
The Master: Off the record.
(Discussion off the record.)
Mr. Gariepy: Q. Why did you do that, Doctor?
A. I felt that we wanted information on all these problems. I wanted to know personally, if I should speak about it, just what the set-up in the paper mill is, how qualified the paper mills are to produce products for food.
Q. Is that from a research standpoint?
A. From a research standpoint, yes.
Q. And what about this matter of going to the mills from a practical standpoint, after you had ascertained and after you know what the quality of the board is and the processes employed in the making of the board?
A. I don't know whether I fully appreciate the question. I would have to refer to the mill to answer it somewhat.
Q. After you have been to the mill.
920 A. After I had been in the mill I found in the mill that the man—they had a laboratory man, a well trained laboratory man, who I found had a very com-

plete control of the process of operations, the manner of sterilization of water and right through, and upon an examination of the paper we found the paper there was practically sterile.

Q. What do you mean by sterility, Doctor?

A. We have a bacteriological definition of sterility, that it means complete freedom from all bacterial and all germ life, complete freedom from any kind of germ life.

Q. And what does sterility mean from a milk sanitary point of view?

A. In the dairy operations the term was borrowed and used with a different meaning from a practical standpoint. It means the reduction—really, strictly speaking, it means the reduction of bacteria to a reasonable minimum, the reduction of the total amount of bacteria to a reasonable minimum.

Q. To the degree of safety?

A. Yes.

Q. What factors contribute to the low bacterial content of this paper that you said you examined?

A. The paper board was made in such a way—as it is made, the wood is cooked, and when the cooked wood or pulp comes out it is a hundred per cent sterile, bac-
921 teriologically speaking.

Then it is diluted with water, and if the water is not pure, of course, the pulp will become contaminated by the dilution of the water. It will also become contaminated with bacteria from the equipment, if the equipment is not kept rather clean.

Then the pulp, after it is washed, goes in the bleaching process, and there it is again sterilized a hundred per cent. So that it is perfectly sterilized. So when it comes from the bleacher not a single bacteria is found in the mixture.

Then the third step is when finally the pulp is diluted with water and passed over to be made into paper, the layer of pulp or paper then runs over anywhere from thirty to one hundred and fifty steam rollers. These rollers are heated under pressure by steam, so that the pressure they use is about 250 pounds—pardon me, about 15 to 20 pounds pressure, as used on some of the rollers, and the temperature is raised to about 250 Fahrenheit on the roller, and the paper runs over it, so that when the paper comes to the end and is taken off the roller the paper is sterile, from this standpoint of definition.

Q. Do you know the methods employed to prevent
922 contamination of that paper board after it leaves the rollers?

A. We followed it. We visited the place as it came off. It is cut by machine in squares and the machine piles it on something like this (demonstrating). Then it is wrapped in paper and finally bundles of about 3500 pounds are piled together in a bundle, and all wrapped in paper, and fastened, and then in that condition, on rollers or sort of skids, it is put into a railroad car and transported to the carton company.

Q. Do you consider that a satisfactory procedure from a sanitary standpoint?

A. From what I saw was being done, yes.

Q. Did you have occasion to go to the fabricating mill then?

A. I did.

Q. And did you inspect that mill from a sanitary standpoint?

A. I did.

Q. In regard to contamination and the preventing of contamination?

A. In the carton factory, you mean?

Q. Yes.

A. We did not take any bacteria samples there, because there is nothing to take.

Q. What do you mean, there is nothing to take?

A. The only thing we could have taken is to expose
923 plates to air or something like that. We examined the paper after it passed through the plant, but we examined the question of the storage of these bundles. We found that they were stored in air conditioned rooms, at a proper temperature. They were inspected regularly, to prevent any entrance of any insects, and the general inspection, as far as I was concerned and could figure out, they tried all they could and were willing to make any changes reasonable to comply with any requirements to handle the product in a sanitary manner.

Q. Did you perform such tests on the board over a period, we will say, of twenty-four hours, to see whether the bacteria survived or not, on the paper board, as it came from that fabricating plant?

A. I made tests. We made some studies on the—I call

it self-purification of paper. I don't know whether you have reference to that.

Q. The test you made in regard to how much bacteria survived after a period of twenty-four hours.

A. Yes. We inoculated—these samples—

Q. No, just follow my question, Doctor. Will you find, in the sheaf of papers that you have before you, the results of the tests that you performed with regard to the
924 survival of bacteria on the paper board?

A. Yes. May I explain this table?

Q. Wait, let us first get it marked.

A. It is the determination of the number of bacteria after the container entered the machine and it was formed and the bottom was sealed before paraffining.

Q. You run ahead of the question, Doctor.

The Master: Off the record, please.

(Discussion off the record.)

Mr. Gariepy: (Addressing the reporter.) Will you mark this sheet for identification, please?

(The sheet referred to, containing results of tests made by the witness, was thereupon marked for identification Plaintiff's Exhibit No. 46.)

The Witness: I tried to determine this point—

Mr. Gariepy: Q. Referring to Exhibit 46?

A. Yes.

Q. For identification?

A. Yes. If paper becomes contaminated in any way with bacteria, how long will the bacteria survive in living condition on the paper?

Q. And when did you perform that test, Doctor, with regard to the longevity of the bacteria, in the event
925 there is some contamination?

A. This test was performed last Wednesday.

Q. Last Wednesday?

A. Yes. I had others, but this I did myself here.

Q. September 6, 1939?

A. Yes.

Q. And where did you perform it?

A. At my laboratory in Urbana.

Q. And where did you get the product or the board on which you performed this test?

A. The board I got from the Cherry River Paper Mill.

Q. And did you ask them to pick out any particular board?

A. No.

Q. Or just send you samples of board, or what?

A. Just send me samples of board. I didn't tell what it was. I told them it would be examined for bacteria, but the condition of the paper had nothing to do with this problem.

Q. What test did you apply and work out last week, last Wednesday, with regard to this matter of the longevity of bacteria on this board?

A. I took pieces four and a half inches long and two inches wide, strips. I made a bacterial suspension, and I dropped the pieces of paper in the suspension, and then I kept it at room temperature and examined it every
926 so often.

Q. And what did you find after performing that test, say after the first six hours?

A. The bacteria died very rapidly on the paper.

Q. Tell the Master and counsel just exactly what you did find at that time that the bacteria died on the paper.

A. I dropped the paper in—

The Master: Q. Dropped it into what?

A. Dropped it into the bacteria suspension.

Q. What do you mean by that suspension?

A. I grew bacteria. I will show you a plate. I will explain it. I grew bacteria something like this (exhibiting plate to the Master). You see the red bacteria. There are millions and millions of bacteria in this red. Then I mixed it with water and a little milk, so they would not die, and then I dropped the paper in that suspension and the suspension had roughly, I think, six hundred million bacteria per cubic centimeter.

Mr. Gariepy: Q. In order to contaminate it?

A. Yes, in order to contaminate it heavily, the piece of board.

927 Q. Then what did you do next?

A. Then as soon as the water dripped off, I took it and disintegrated it into pulp.

Q. The board?

A. It took about five minutes, yes, and I plated it immediately, to count the bacteria in it on the board, and this is the first line. I made ten plates.

Q. Referring to exhibit number 46?

A. Yes, sir.

Q. You made ten plates?

A. In each plate I put two cubic centimeters, I took the bacteria and added 200 cubic centimeters of water, broke it up and added 200 cubic centimeters of water, to it, and on each plate I estimated the number of colonies that developed, then I made another strip of paper, prepared in the same way, that I kept thirty minutes and again subjected it to the same treatment and I got this number of colonies.

Q. How many is that?

A. Four hundred and fifty.

Q. After sixty minutes, how many colonies did you find on the paper?

A. After sixty minutes, I found from 3 to 20.

Q. The longest is two hours?

A. The longest is two hours. Six of the plates
928 did not have any, and three plates had one colony, and one plate, two colonies.

Q. At the end of five hours?

A. Two plates each had one colony and they had none, the rest of them.

Q. At the end of nine hours?

A. I didn't find any.

Q. At the end of twenty-four hours?

A. None.

Q. That means what?

A. That means that after the paper is contaminated and is held at room temperature and dries, the bacteria is killed. The bacteria are killed by drying.

Q. The purpose of this test, Doctor, was to bring out whether bacteria would survive on this paper board after you had contaminated it with bacteria and taken tests of the paper board after disintegrating it at the end of thirty minutes, nine hours and twenty-four hours?

A. Yes.

Q. At the end of thirty minutes, five hours, nine hours and twenty-four hours you found practically no bacteria surviving on the board, is that right?

A. That is correct. In other words, here is the point—

929 The Master: Q. After the board is disintegrated, how could you find any bacteria on the board?

A. I smashed the board all to pieces, diffused it in water so that any bacteria living there will be suspended in the mixture.

Q. Was the board in one piece while it was in suspension?

A. No. I had broken it up with the machine, completely.

Q. You just put little bits of it in this liquid?

A. I just took the board, put it in the machine, agitating the machine, cutting it in smaller pieces and let the machine agitate until the paper was reduced to pulp, then I took some of this water to plate it.

Q. Some of what?

A. Mixed the water, took some of this water to plate it, to see how many bacteria I found in that mixture. This is a method of trying to determine how many bacteria remained on a piece of board after they are reduced to pulp.

Q. You took the board and cut it up into small bits?

A. I took a piece of board and dipped it into the bacteria suspension for about ten seconds and when I
930 pulled it out, after the last drop fell off I put it into the machine and broke it up into pulp. I felt this is a better method to count the number of bacteria on the board, by smashing it up completely.

Q. Then what did you do with it?

A. Then I plated it. I determined the number of bacteria in this mixture.

Mr. Gariepy: He took out portions of this mixture after it had been immersed in this contaminated liquid and plated it for the number of bacteria he would find, and counted them.

The Master: Q. You took a segment of this board?

A. Yes.

Q. And dipped it in this mixture, first?

A. Yes, sir.

Q. Then you took out the board?

A. Took the same piece.

Q. With the contamination on it?

A. Yes.

Q. And ground up the board?

A. Yes.

Q. Now, what did you do with the pieces of the board, did you put it in the mixture or put it on plates?

A. The board was completely disintegrated.

931 Q. What did you do with those little bits after you ground up the board?

A. The pulp, itself?

Q. Yes.

A. It is right in here on these plates.
Q. You put that on the plates?
A. Yes.
Q. You contaminated the board by dropping it into this mixture which had been contaminated?
A. Yes, sir.
Q. Then you ground up the board after it had been removed from the contaminated mixture?
A. Yes, sir.
Q. Then you put that contaminated board on those little bits of pulp?
A. After it was broken up.
Q. And put them on plates?
A. Yes, measured quantities.
Q. Quantity of what?
A. I put 2 cubic centimeters of the mixture—
Mr. Gariepy: Q. Doctor, I show you a series of six plates—
The Master: Wait a minute, before you go anywhere.
(Discussion off the record.)
The Witness: Do you see the pulp in there?
932 The Master: Q. Let me follow you. You seem to be going back and forth here. First you take a segment of this board four inches by some other dimension?
A. Yes.
Q. You dip that into a contaminated mixture?
A. Yes.
Q. So how long did you leave the board in the contaminated mixture?
A. About ten seconds.
Q. You took out this piece of board with the contamination on it?
A. Yes.
Q. Then you put it through a grinder or something?
A. Yes.
Q. Something that tears up the board into small bits?
A. Yes, sir.
Q. What do you do with the small bits?
A. Then I take the whole mixture—
Q. There is no mixture?
A. It is a mixture of water and the pulp, that is what I mean.
Mr. Gariepy: Q. These were actually made by you?
A. Yes.

Q. The results shown on these different plates here?

933 A. Yes, I just picked them at random.

Q. That is marked five hours?

A. Yes, sir.

Q. What does that show concerning bacteria?

A. At the end of five hours the plates look like this.

Q. Which is devoid of any bacteria?

A. Yes, except this—there was one colony on one plate and one colony on another plate. I took a plate that did not have any colony—

Q. Explain to the master what this plate is that I show you now, and how many hours that was in?

A. I think that was thirty minutes. This was one hour and this was two hours. At the end of two hours, holding the inoculated piece of board in at room temperature, letting it dry for thirty minutes, we got this (indicating); one hour, we got this (indicating).

The Master: Q. What do you get here? All I see is something with red spots.

Mr. Gariepy: Q. What do the red spots mean?

A. Each red spot, theoretically, is produced from one living bacteria, it grows.

The Master: Let's see if I get this straight, now. You are always skipping some point.

934 Q. Did you dip a piece of this board into a contaminated liquid and take the board out? The contamination is on the board, isn't it?

A. Yes.

Q. Now, you say you took this contaminated piece of board and disintegrated into some liquid?

A. Yes.

Q. Water?

A. Yes.

Q. Sterile water?

A. Yes.

Q. Is there any time at all elapsing between the final disintegration of the board and the time when you add your nutrient liquid such as milk?

A. This particular number one was dipped for ten seconds, the board, and at the end of ten seconds I took it and put it in the machine and broke it up in five minutes and then immediately I made plates. That took about three minutes. So that from the time I inoculated the

board until each plate was plated was eight to ten minutes, including disintegration and everything. Do you get that?

The Master: No. You see, I don't understand everything that you did.

A. I am skipping something?

Mr. Gariepy: Just follow the Master's questions and just answer him in chronological order as he
935 puts it to you.

The Master: Q. After you took out the piece of board from the contaminated liquid, you went ahead after that and tore up the piece of board and put the torn pieces in a sterile water, is that right?

Mr. Gariepy: Say "Yes", if that is right.

A. Yes.

The Master: Q. If contamination was in this liquid into which you dipped these pieces of board, that contamination would still be on the pieces of board after you took it out of the contaminated water, wouldn't it?

A. Yes.

Q. Now, how long would that contamination continue to exist on that piece of board, even after you disintegrated it?

A. I did not determine that.

Q. But it would take some time, wouldn't it?

A. Yes. I didn't do that, because I immediately performed this test.

Q. Now, then, it is reasonable to say now that, having dipped this piece of board into contaminated fluid, the contamination would be on the piece of board after the piece of board had been withdrawn?

A. Yes, sir.

936 Q. Now, you disintegrated the board?

A. Yes.

Q. And you took part of the mixture of sterile water and disintegrated board and put it on the plate?

A. Yes.

Q. Then you put something on the plate, put in nourishment, put in bacteria that might be in that disintegrated board?

A. Yes, sir.

Q. Or on it?

A. Yes, sir.

Q. What is the significance of these various time elements you have mentioned?

A. That is one board. I took another board, treated

it the same way and held it before I disintegrated it, in the room.

Q. Before you disintegrated it?

A. Yes, sir, so that it dries.

Mr. Gariepy: He dipped it.

The Master: Q. You did not put anything on these plates until after you had disintegrated it?

A. No. I prepared a number of these strips, I tried to determine this point, how long and how many bacteria will survive on the paper after the paper is infected, inoculated and allowed to dry.

Q. I know, but let me ask you this question:
937 Immediately upon withdrawing the piece of board from the contaminated mixture, did you go ahead and disintegrate the board or did you first permit the board to dry, then disintegrate it?

A. Both. You see, this plate represents—

Q. These are different experiments?

A. Yes.

Q. In other words, you did not in all cases disintegrate the piece of board immediately upon withdrawing it from the contaminated mixture?

A. In this case I did, that one.

Q. You did not do it in all cases immediately?

A. No, sir.

Q. But, at varying times?

A. Yes.

Q. You did that?

A. Yes.

Q. You waited some time between withdrawing the piece of board from the contaminated mixture and disintegrating it; in some instances you withdrew the piece of board from the contaminated mixture and you waited, you say, how long?

A. Thirty minutes—one hour—two hours.

Q. Before disintegrating it?

A. Yes, sir.

Q. And then, having disintegrated it, you would
938 put the disintegrated material on these plates?

A. That is correct.

Q. And then give nourishment?

A. That is correct.

Q. To see if any of the bacteria were still in existence?

A. That is correct.

Mr. Gariepy: Q. These plates representing the red marks on these places, represent what?

A. The living bacteria. Each mark is theoretical.

Q. Each red mark?

A. Each of them is a bacteria colony, starting, theoretically speaking, from one germ. Now, may I add something?

Q. Yes.

A. This I know, one company that uses paper containers for food, they purposely buy a supply so that they have it several days before they can use it, because of this very thing—they feel when paper is—it purifies itself, if it is contaminated anywhere along the road with the bacteria that happened to drop on it, will die.

The Master: Q. Your point is that the paper 939 does not give nourishment to bacteria?

A. No. Drying kills bacteria.

Mr. Gariepy: Q. The quality of the paper is self purification?

A. It has that tendency.

The Master: Q. The results of your experiments show what, now?

A. The results of my experiments show that in 30 minutes 96 per cent of the bacteria had died.

Q. That is the one where the piece of paper was allowed to dry for thirty minutes before you disintegrated it?

A. Yes. Taken immediately, I figured there is no reduction as to disease; and in thirty minutes over 96 per cent—

The Master: Wait a minute. After thirty minutes over 96 percent of bacteria, did what?

A. Died.

The Master: But, you don't say that. I can't guess at it.

A. According to these counts, I did not find them.

Q. 60 minutes, then over 99 percent had died?

A. Yes.

Q. And in two hours you found a little more had died?

A. Yes, sir.

940 Q. And in 9 hours it was all gone?

A. Yes, sir.

Q. You could not find any bacteria at all?

A. Correct.

Q. Did you test to see whether they were the same bacteria as were in the contaminated mixture?

A. Yes. This is the criterion, this color.

Q. All right.

A. I am sorry I didn't make it clear.

The Master: Go ahead.

Mr. Gariepy: Q. Is that the standard method, Doctor, that you employed, that you used in order to detect the preservation or the existence of bacteria in the board?

A. Yes. I don't know of any better method.

Q. Have you been to the plant, Fieldcrest Dairies Milk Plant at Chemung, Illinois?

A. Yes.

Q. Have you taken samples of the fabricated containers there and performed tests upon them with regard to bacteria content?

A. Yes.

Q. Did you do that recently, Doctor?

A. We did that last March.

Q. 1939?

A. Yes, I think it was March.

941 Q. March?

A. Yes.

Q. And you took it under ordinary normal working conditions in the milk plant?

A. The bottles were picked by a man in the plant as they came off.

Q. At your direction?

A. Yes, and sent to us, to our laboratory.

Mr. Schaefer: Q. Were you there, Doctor?

A. I was not there myself when these particular bottles were taken.

Mr. Gariepy: Q. You have been to the plant, have you?

A. Yes, a number of times.

Mr. Gariepy: May I have this paper marked for identification as plaintiff's exhibit 47.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 47 for identification.")

Q. What test did you perform on the sample of the blank containers that you received from the Fieldcrest Dairies in March?

A. In the first place, 200 containers were examined that way.

Q. How did you examine them, give the Master the technique?

942 A. We used for 50 of them the United States Public Health method.

Q. What condition were they in when you received them?

A. They were passed through the machine and sealed.

Q. Sealed with paraffin?

A. Paraffined and the opening was sealed, yes—except, no milk.

The Master: Q. There was nothing in them?

A. No.

Mr. Gariepy: Q. What did you do after you got them, Doctor?

A. As soon as they came I subjected them to the bacteriological test to find out how many bacteria were inside, that I could recover from inside, by applying the regular standard methods for bacteria examination.

Q. What was that regular standard method for bacteria examination?

A. The regular standard method for bacteria determination at the time was that we took 100 cubic centimeters of water, opened the container—

The Master: You did a rinse test?

A. Did a rinse test, yes, I examined 50 containers that way. Then I had a little correspondence with

943 Dr. Arnold, so he raised a question as to the methods for counting bacteria, so I took another 50 and I poured directly into it without rinsing and whirled it around like this (indicating), and left it without opening it, to incubate, and then I opened it and took the gelatin out and tried to count the bacteria without diluting them with water, and it was suggested—

The Master: Q. Instead of rinsing with water?

A. I didn't rinse it.

Q. You were really rinsing it with this nutrient?

A. Yes.

The Master: Go ahead.

Mr. Schaefer: To make it clear to me, Doctor, how long did you leave the nutrient broth in it?

A. How long did I leave the agar in it?

Q. Yes.

A. Three days.

Q. Then it wasn't just a rinse?

A. No. I was interested a little more than mere control, I was interested in actual practice, and the rinse test as applied, the standard methods, they incubate the plates a short time. I incubated this a longer time. Then another 50, it was suggested by some workers that,
944 instead of rinsing it with 100 cubic centimeters, to use only 20.

Mr. Gariepy: Q. Sterile water?

A. 20 cubic centimeters of sterile water, shake it and then take 10 cubic centimeters out and make three plates out of that 10 cubic centimeters, reduce the rinse. 50 were examined that way. Then I applied the method that is recommended in the new standard ordinance for examining bottles, and that is using only 10 cubic centimeters and rinsing it, and in some cases I made plates, I used 5 cubic centimeters instead of 2 cubic centimeters, the standard method. I figured that brings out a little more the number of bacteria in there.

Q. Does plaintiff's exhibit 47 here show the result of your findings?

A. Yes, they are grouped together. I have another table, if anybody wants it, where I separated the methods.

Q. This was in March, 1939?

A. I think so, somewhere in March. I don't know what date. I would have to look up my notes.

Q. The first column is the number of containers?

A. Yes, sir.

Q. The second column is the number of bacteria found?

A. Total number of bacteria found in the whole container.

945 Q. Those are clear. I don't think it needs further elaboration.

A. All right.

Q. Have you had occasion to perform bacterial tests with regard to washed and sterilized bottles in the milk plants operating in the City of Chicago?

A. Yes.

Q. When did you do that?

A. In July.

Q. This year?

A. Yes.

Q. 1939?

A. Yes.

The Master: Q. Glass bottles?

A. Glass bottles.

Mr. Schaefer: Q. That sheet, Doctor, represents the results—plaintiff's exhibit 47—represents the results of the rinse tests conducted by you?

A. 47?

Mr. Gariepy: Q. Yes, 47.

A. Represents the results of the examination of the Pure-Pak Containers from Fieldcrest Dairies.

Q. Is it a rinse test, or what test?

A. It is a combination of the four tests, fifty examined by each of the four tests I described.

946 The Master: Q. You only described two that I remember. One was rinse test and the other one was by disintegration.

A. In one case I used 100 c. c., in one case I used 20 c. c. and in one case 10 c. c., reducing the amount. Here is the table, Mr. Schaefer, showing the different tests separately.

The Master: Let's not confuse things here. Introduce what you want and make a clear record.

Mr. Gariepy: I will have this paper marked as plaintiff's exhibit 47-A.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 47-A for identification.")

Q. Plaintiff's exhibit 47-A is an exhibit showing what with regard to the type of test, Doctor?

A. 47-A is a rinse test with 100 cubic centimeters, 50 containers.

Q. The first column?

A. Each container was rinsed with 10 cubic centimeters and all recovered water was plated.

Q. What does it next show?

A. The next 50 were rinsed with 10 cubic centimeters, and plated.

Q. The next column?

A. No rinse, and the nutrient gelatin was poured
946a in directly.

Q. Do those correctly show the results of these three tests?

A. I think so. They check pretty well. If I may correct my testimony, please.

Q. Yes.

A. In the third test we poured all instead of half of it. We poured all 10 cubic centimeters.

Q. And all of the 10 cubic centimeters?

A. Yes.

Q. You say "c. c." That says "m. l." Is that the same thing?

A. "M. l.", yes.

Q. Do you know the methods employed at the Fieldcrest Dairy with regard to the use of machine, in order to prevent contamination after running and filling of milk, Doctor?

A. Yes.

947 Q. What are those methods?

A. The machine is, of course, operated under inspection. It is washed and sterilized.

Q. How is it washed and how is it sterilized? Tell the Master.

A. When they get through the bottling, they take the machine apart, principally the main point to take apart is the filling compartment.

Q. Showing you planitiff's exhibit 15-A, received in evidence, show the Master which parts are taken apart and sterilized and washed?

A. All parts that milk comes in contact with are washed.

Q. What is that? Describe that.

A. It is a reservoir about that big (indicating), it holds about thirty or forty—

The Master: Q. You are referring to the cylindrical object?

A. Milk is dropped and comes in contact with the machine here and is dropped in this cylinder here (indicating).

Q. "Here" don't mean anything.

A. This reservoir.

Q. It is the cylinder right beneath the second arrow from the left on plaintiff's exhibit 15-A?

948 A. Yes, sir.

Q. All right.

A. Then, over here the milk is measured; there are two measuring compartments or devices which measures a pint of milk and the bottle comes under here (indicating).

Q. No, don't say the word "here." The bottle comes under the cylinder?

A. Under the first one.

Q. Comes under the cylinder?

A. The bottle comes under the cylinder and a pint of milk is dropped in it and then is pushed about four or five inches further and another measuring device drops a pint of milk in it, making a full quart; then it goes from here (indicating), it is sealed, dated and goes out.

Q. At the left end of the machine?

A. Yes, sir.

Q. On this exhibit?

A. Yes. Now, in cleaning the cylinder or measuring device, anything that is removable is taken apart and washed in the usual way.

Q. What is the usual way?

A. The usual way is, first it is rinsed thoroughly with water.

949 Q. What kind of water?

A. Regular drinking water.

Q. Then what next is done after that?

A. Then it is taken apart and washed in a soap or alkali washing solution. Then it is rinsed again and then—

Q. Rinsed with what?

A. Water.

Q. Drinking water?

A. Yes, with drinking water. Then it is sterilized with chlorine solution.

Mr. Gariepy: Q. At what temperature?

A. Room temperature. We use warm water and warm soapy solution to wash it.

Q. Is that done after each running and operation of the machine, they call it, each washing?

A. It is done at the end when they get through bottling of the supply of milk, it is taken apart and cleaned.

The Master: Q. According to the direction, is that done more than once a day, or once a week?

A. It is done at the end of each day or at the end of bottling.

Q. Once a day?

A. Yes. Sometimes in some plants they bottle cream and milk—

950 The Master: That is all right.

Mr. Gariepy: Q. What do they do besides removing these removable parts and washing them? What other

things do they do with the machine to prevent contamination?

A. They open up the cooling unit, the lid opens up, and it is rinsed.

Q. With what?

A. With drinking water, all through, it is rinsed up to this point (indicating).

The Master: Q. What point is that? Mention it.

Mr. Gariepy: Q. Describe what that point is?

A. Up to the paraffining compartment.

The Master: Q. That is the portion of the machine at the right hand end?

A. Yes.

Q. Right near this clock or device?

A. Yes, sir.

Q. Or this tower on this machine?

A. Yes, it is the cooling unit.

Q. All right.

A. We rinse it with running water.

Q. What are we rinsing now, the cooling unit?

A. Yes, this here.

Q. All right.

A. And the milk does not come in here, they rinse it and after it is rinsed and cleaned they take a bucket
951 of chlorine solution and apply it all over the surface and sterilize it.

Q. Why do they have to sterilize the cooling unit? What is that for?

A. The cooling unit, the containers come out of the paraffining compartment and they travel along here (indicating).

Q. They travel to the left?

A. Yes.

Q. All right.

A. Through the cooling compartment, and the cooling compartment is used to cool the container so that the paraffin sets and hardens and there is a fan there inside to blow the cold air so that it aids in cooling.

Q. What cools the cooling unit?

A. Well—

Q. The air, or what—or is it ice?

A. It is not ice. I think they had better tell you exactly.

Mr. Rall: Refrigeration coils.

A. Yes, sir, refrigeration coils.

The Master: Q. What do they clean, a portion of the cooling unit through which the paraffin container travels?

A. They clean the whole thing, clean everything inside.

952 Q. I see.

A. The idea is this, the containers after they leave the paraffin, are open and the air surrounds it.

Q. Yes.

A. And that compartment ought to be sterilized.

The Master: Go ahead.

Mr. Gariepy: Q. This cooling chamber you are talking about is cleaned out only by the use of ordinary drinking water?

A. Drinking water and chlorine solution after they rinse it out.

Q. You said it is sterilized?

A. I used a commercial expression.

Q. Do you use that chlorine solution to sterilize that cooling chamber?

A. Commercially speaking, yes.

Q. All right.

A. The surfaces inside.

Q. The effect of this cleaning operation is to remove whatever air there has been in there, and after the cleaning solution is out, new air comes in?

A. Yes.

Q. And you have no way of knowing what that new air contains, do you?

A. Well, we carry on some tests on that point. I have a table.

953 Q. Of what the new air contains?

A. During the whole operation, how many bacteria there are in the air and how many will fall down. We made tests on that.

Q. Have you performed tests with regard to the bacteria count on the Pure-Pak container after it has been through the paraffin bath?

A. Yes.

Q. And before it is filled with milk?

A. Yes, sir.

Q. And before it enters into the cooling chamber?

A. Yes.

Q. And when did you perform those tests?

A. One of the exhibits gives it.

Q. Do you know the date?

A. Over a period of almost two years, now and then.

The Master: Q. What year?

A. The last two years.

Q. 1938 and 1939?

A. Yes, sir, two and a half years.

Mr. Gariepy: I will ask that this paper be marked as plaintiff's exhibit 49 for identification.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit 49 for identification.")

954 Q. Referring to this document marked plaintiff's exhibit 49 for identification, is this table the result of these tests you have performed?

A. Yes, sir.

Q. I show you plaintiff's exhibit 49 for identification. Does that show the result of these tests, Doctor?

A. That is these two tables, yes.

Q. On that sheet?

A. Yes.

Mr. Schaefer: Q. Are all of the tests over the last two and a half years there?

A. This was done during the year 1937.

Q. Exhibit number 49?

A. Mostly.

Q. Are the result of the 1937 tests?

A. Yes, sir.

Q. What do those tests show?

The Master: Q. Where were these conducted?

A. At our place at the University, when we had the machine there.

Mr. Gariepy: Q. That is the same machine that Fieldcrest Dairies are using at Chemung, Illinois?

A. Yes, sir, the same machine.

The Master: Q. Where did you get these containers?

955 A. We paraffined them ourselves, I picked them myself.

Q. Why does this say "bacterial * * * contents of 132 Pure-Pak paraffined containers from eleven different milk plants?" What do you mean by that?

A. I mean the first table here, that is paraffin is not on them, that is containers unparaffined, before they are par-

affined are sent in from eleven different milk plants all over the country.

Q. And you paraffined those yourself?

A. Yes, sir.

Q. And did the experiments on your own machine?

A. Yes, sir, and these were the containers.

Q. "These" don't mean anything.

A. Table 9.

Q. Containers at the bottom half of this exhibit, table 9, what are those?

A. Those were the containers we were using at the time, without milk; these we were using on this machine to bottle our own milk, the University milk, and in connection with it I took samples of the empty containers every day, here to there.

The Master: All right, go ahead.

Mr. Gariepy: Q. You plated these tests and these results shown on the sheet, Plaintiff's Exhibit 49 at the
956 top and the bottom, representing what you ascertained?

A. Yes, I did the work myself.

Q. Did you make a study of the bacteriological condition of the paraffin bath in this Pure-Pak machine.

A. Yes, sir.

Q. Where was the machine when you made that study and from what paraffin was it, at the Chemung Plant or at the University of Illinois?

A. That was at the Chemung Plant.

Q. When did you make that study?

A. This spring, in 1939—I forget the date.

Mr. Gariepy: I will ask that these two sheets be marked Plaintiff's Exhibit 50 for identification.

(Two typewritten sheets referred to were thereupon marked by the Reporter "Plaintiff's Exhibit 50 for identification.")

Q. I show you Plaintiff's Exhibit 50 for identification. Have you seen that before?

A. Yes, that is my table.

Q. All right, does this table represent your study of the bacteriological condition of the paraffin bath with the Pure-Pak Machine?

A. I took the samples myself.

Q. At the University of Illinois?

957 Q. Wasn't that in March of 1939, about the 24th?

A. Yes, sir.

Q. About the 24th?

A. Yes, sir.

Q. What does this show with regard to the bacteriological condition of the paraffin bath?

A. It shows the paraffin was sterile, I couldn't find any bacteria in the paraffin bath.

Q. Was that taken under usual working conditions of the plant?

A. Yes, this was taken during the operation of the machine while the milk was being bottled and the time all samples were taken right here (indicating).

Q. Shown in table number 1?

A. Yes, sir.

Q. Your remarks as result of each sample is shown on the right hand side, under "Remarks" at the start for whipping cream, and so on, down to the end—bottle finished?

A. Yes.

Q. Have you made a study of the bacteriacidal property of paraffining?

A. I have.

Q. When did you do that?

A. I have been carrying on a study for two and a 958 half years on that subject.

Q. Was that at the University of Illinois, too?

A. At the University of Illinois.

Q. When did you last perform any tests to ascertain bacteriacidal property of paraffining?

A. During the last month.

Mr. Gariepy: I will ask that this paper be marked Plaintiff's Exhibit 51 for identification.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 51 for identification.")

Q. I show you Plaintiff's Exhibit 51. Does that represent the result of your study and experiments and research on the bacteriacidal property of paraffining?

A. Yes.

Q. Did you tell in the record when it was done?

A. It was done the last two weeks of last month, August, 1939.

Q. Explain to the Master what Plaintiff's Exhibit 51 shows, concerning that bacteriacidal effect?

A. The exhibit was laboratory experiment in which

strips of paper board were inoculated again by being dipped in bacteria suspension; then they were paraffined in the laboratory and then after paraffining they were
959 again disintegrated in the same way and the number of bacteria was determined that remained on the paper under the paraffin and in the body of the paper, on the whole strip of paper.

Q. How did you ascertain the number of bacteria? What did you do?

A. We took a strip and disintegrated it, reducing it to pulp, in water and then we plated the plaque from the pulp and water, making ten plates from that strip of paper, using two cubic centimeters of the mixture in each plate, that is of the pulp and water, disintegrated pulp; the plaque was taken up in the pulp in 200 cubic centimeters of water.

Q. Key numbers under plaques, you have "W-N-P."

A. Yes.

Q. What do you mean?

A. "W" means that the plaque was paraffined while wet.

Q. "W P," number 2 * * * in the left hand column?

A. "W" means the plaques were wet when they were disintegrated or paraffined, and "N" means when the plaque was not paraffined, and "P" means plaque paraffined.

Q. You followed this abbreviation of key numbers you have here?

960 A. Yes, sir.

Q. In describing each one of these tests and the subject as you put it to the test?

A. Yes, sir.

Q. What does your experiment as shown on the tables under tests 1, 2 and 3 in Exhibit 51 show with regard to the bacteriacidal property of paraffining?

A. It shows that if you paraffin inoculated paper at 170 degrees F. for 15 seconds, and the artificial contamination of paper is very heavy, few of the bacteria will survive paraffining.

Q. Explain what you mean by "artificial contamination of the paper?"

A. Artificial contamination of the paper was done by taking a strip of paper and dipping it in bacteria suspension having many millions of bacteria per cubic centimeter of the suspension.

Q. Have you performed tests with regard to ascertaining if there is any contamination of the milk by the Pure-Pak machine when practically sterile milk was bottled?

A. Yes.

Q. And when did you do that?

A. That experiment was done in the summer of 1937.

961 Mr. Gariepy: I will ask that this sheet be marked Plaintiff's Exhibit 52 for identification.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 52 for identification.")

Q. I show you Plaintiff's Exhibit 52 for identification. Does that represent the result of your experiments on that?

A. Yes.

Q. Where were those tests conducted?

A. Those tests were conducted in our own milk plant at the University of Illinois.

Q. Was that under ordinary working conditions?

A. This was a special experiment in that we used milk which was almost sterile; otherwise, everything was done as in ordinary handling of milk.

Q. Why did you use milk that was practically sterile?

A. We found in paraffining tests that the number of bacteria contributed by the machine to the general milk was so small that we had difficulty to determine it by examining the regular milk, therefore I decided to use milk which had only very few bacteria.

Q. How much contamination did this test show came from the Pure-Pak Machine?

962 A. Occasionally bacteria got in in the milk.

Q. How much, in the number of tests that you ran, how much bacteria did you find that the machine contributed to?

A. The first milk poured in the reservoir, bottling reservoir of the machine, had 33 bacteria, roughly. The first bottle filled had about 40. One bottle filled had about 6. And from that time to the rest of the bottling, it varied from 6 to 20, total number of bacteria in the milk.

Q. It varied from what?

A. From about 5 bacteria to 20.

Q. And how much had the machine contributed to cause that increase?

A. Well, the milk had, I would say, about 5 to 10 bac-

teria per cubic centimeter to start with, and the difference between that and the counts in the milk indicates the number of bacteria that were picked up by the milk through bottling.

Q. What machine did you do this with?

A. We had a Pure-Pak Machine, the same machine that finally was bought by Dean Milk Company.

Q. At the plaintiff's plant at Chemung, Illinois, Fieldcrest Dairies?

A. Yes, sir.

963 Q. That is the same machine?

A. Yes.

The Master: Q. Where did you conduct the experiments on the machine?

A. These experiments were conducted on the machine at the University of Illinois.

Q. That machine was moved bodily to the Dean Milk Plant?

A. Yes.

Q. Was that machine a new one at the time you conducted the experiments?

A. Yes. We used it, I should say, about two months.

Q. To whom did it belong during the time that you were conducting experiments?

A. To the Pure-Pak people.

Q. They moved it from the University of Illinois to the Dean Milk Plant at Chemung?

A. That is my understanding. They took it out.

Q. You have answered it.

A. Yes.

The Master: Go ahead.

Mr. Gariepy: Q. Does this amount of contamination present a health problem, Doctor, from a milk sanitarian's point of view?

A. It does not.

Q. Have you any opinion as to whether or not the fact that the machine on which these tests were run was a

964 new machine would cause the result to be any different than if the machine had been a machine that was a year old?

A. I have to give my opinion.

Q. What is your opinion?

A. My opinion is that it would make no difference.

Q. And, why?

A. If they used the same method of cleaning and sterilizing and handling, it would make no difference.

Q. In other words, you would not expect any greater amount of contamination from an old machine than you would from this machine, if the same methods of sterilization are employed after each filling?

A. No.

Q. Have you made any similar tests with regard to contamination in the matter of the machinery and equipment used in filling glass milk bottles?

A. Yes.

Q. When and where?

A. I have been making tests right along in our plant and in other milk plants.

Q. When did you do that, Doctor?

A. The last thirty years, every now and then.

Q. When is the last time?

A. We did last month, I think we were working on some problems in our own milk plant.

965 Q. Last month?

A. Yes.

Q. You were working on some problems in your own milk plant?

A. Yes, sir.

Q. From that experience was the degree of contamination that you found in the examination of the Pure-Pak Machine higher or lower than what you found in examination of the equipment used in filling of the glass bottles?

A. I would say this, that there would be a tendency for the filling machine, for glass bottle filling, to have more contamination.

Mr. Schaefer: I move to strike that as not responsive to the question.

The Master: Read the question back.

(Question read by the Reporter.)

The Master: I will let it stand.

Mr. Gariepy: Q. Have you performed any tests with regard to the number of bacteria enmeshed in the paper caps used in the filled glass bottles?

A. Yes.

Q. When did you perform those tests?

A. That particular test was performed in March of 1939.

Q. Where was it performed?

966 A.. At the University of Illinois.

Q. Where did you obtain the caps from?

A. The caps were sent to us.

Q. By whom?

A. By Mr. Dean, Jr.

Q. Caps from what dairies were they?

A. One I recall was Bowman's. There were caps not only from Chicago but from other districts.

Q. Take Chicago, only; let's stay with Chicago.

A. I recall there were some caps from Bowman's; there were some caps from Wincel Dairy.

Q. How do you spell that?

A. Wincel.

Q. Do you remember any other names of the dairies?

A. No, I don't recall now.

Q. Were they the standard caps used in the City of Chicago, today?

A. Yes.

Mr. Gariepy: I will ask that this paper be marked Plaintiff's Exhibit 53 for identification.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit 53 for identification.")

Q. I show you Plaintiff's Exhibit 53 for identification, with regard to the figures in the first

968 The Master: Q. Were those caps which had been used?

A. No.

Q. They were just blank caps?

A. Blank caps that had not been used for anything.

Mr. Gariepy: Q. Were they paraffined or unparaffined?

A. They were paraffined partly.

Q. Partly?

A. They received some treatment, paraffining treatment.

Q. There was a greasy feeling on the outside, that slippery, oily feeling, is that it?

A. Yes, sir.

The Master: Q. On both sides?

Mr. Gariepy: Q. The under-side and the top-side?

A. I think so. I am not one hundred percent sure. I think they were just dipped in paraffin.

Q. Have you performed research work and tests to ascertain the bacteriological condition of paper milk containers, Pure-Pak Containers, before being paraffined?

A. Yes, sir.

Q. When did you do that?

A. That was done in the spring of 1937.

969 Q. Where was it done?

A. It was done at the University of Illinois.

Q. On this Pure-Pak Machine that you had down there then?

A. Yes.

Q. How did you perform those tests and where did you get the paper from?

A. The paper was the same container paper, or the containers that we used, that were supplied to us and we used for milk.

Q. In running the dairy, at the University?

A. Yes, sir.

Q. Were these paraffined or unparaffined?

A. These containers were taken and passed through the machine, to the paraffining well. They were not paraffined.

Q. What do your tests show with regard to the bacterial contents of those containers, unparaffined?

A. We examined 128 of those containers and we found that 121 of them had a small number of bacteria, a smaller number of bacteria than the standard for glass bottles.

Q. What is the standard for glass bottles?

A. The standard for the quart glass bottles is 1000 bacteria in the bottle.

970 Q. How much less did these have than the standard in the glass?

A. In 25 of them we recovered no bacteria.

Mr. Schaefer: Q. Was that a rinse test, Doctor?

A. That was standard method rinse test. We found no bacteria in 25. In 25 we found no bacteria. In another 25 we found one colony on one of the plates, which would be 50 bacteria according to the calculations. I don't think it is necessary to go through it.

Mr. Schaefer: I wish you would go through it.

Mr. Gariepy: Take 75.

Mr. Schaefer: Read the next 25 back, from the bottom, that will be satisfactory to me, at the end of the higher counts.

The Witness: The last column I will take.

The Master: Let's get some place.

The Witness: 5 containers had more bacteria than the standard, and the rest of them had less.

Mr. Gariepy: Q. Out of how many?

A. Out of 128.

Mr. Gariepy: I will ask that this sheet be marked plaintiff's exhibit 54 for identification.

(Typewritten sheet referred to was marked by the Reporter "Plaintiff's Exhibit 54 for identification.")

971 Q. That is referring to plaintiff's exhibit 54 for identification, that the reporter is marking now?

A. Yes, sir.

Q. Have you performed any research work concerning adhesive used in sealing the containers?

A. Yes, sir.

Q. Bacterial condition of the adhesive used in sealing of the containers?

A. Yes, sir.

Q. When was that?

A. Last spring—1939.

Q. Where?

A. At the University of Illinois.

Q. That is on the Pure-Pak Container?

A. Yes.

Q. Was that under normal working conditions?

A. These samples?

Q. Just answer the question, was that under normal working conditions at your dairy down there?

A. The adhesive.

Q. Will you just answer the question, was it under normal or abornmal working conditions? Was it some concocted straw man that you set up to test this adhesive, or was it taken in the natural conditions used in the

972 Pure-Pak Containers every day?

A. The samples were from the adhesive used for commercial sealing.

Q. From whom did you obtain them?

A. They were sent to us from the factories.

Q. What factories were they sent from?

A. I don't recall, now.

The Master: Q Who sent it to you?

A. At my request.

Q. But, who sent it to you?

A. The factories that make the adhesive.

Mr. Gariepy: Q. Is it the Arabol Company, in Cicero?

A. I don't remember.

Q. You refresh your memory after lunch, because I want to know that, Doctor.

A. Yes.

Q. There has been some question raised about adhesives here, and I want to clear it up.

A. Yes.

Q. After your inspection and acquaintance and use of the Pure-Pak Machine, have you an opinion as to whether or not there is an occasion or an opportunity for the Pure-Pak Container to become infected after it leaves the
973 paraffin bath and goes through the filling chamber?

A. My opinion is that it is an exceptionally well protected machine, protecting the unfilled containers before they are filled.

Q. Have you an opinion as to whether or not this Pure-Pak Container or Containers may be contaminated on the inside by the handling of the store clerk or the milk man as they deliver them?

A. Yes.

Q. What is your opinion?

A. My opinion is that containers can not be contaminated that way, that the milk can not be contaminated that way.

Q. Have you an opinion as to whether or not there is an opportunity for absorption of milk in the case of glass bottles with the paper cap?

A. The paper cap absorbs some milk.

Q. Have you performed tests on that?

A. Not myself—it is not bacteriologically.

Q. Have you performed tests with regard to absorption in the Pure-Pak Containers?

A. Not myself.

Q. You did not do that?

A. Professor Tracy did some of that.

974 Q. Have you an opinion as to whether or not there is a health hazard existing in the matter of the use of the paper caps as now being employed and used in the City of Chicago?

A. No.

Q. At this time?

A. I think there is not.

Q. There is no health hazard?

A. I don't think so.

Q. How many hours of time have you devoted to this research work with regard to these Pure-Pak Containers, Doctor?

A. We carried on the work now on this whole subject for two years and eight months. The Pure-Pak Containers

took pretty nearly half of the time devoted to this study and I would say I spent close to half of my time during that time.

Q. Is there a standard method of milk analysis?

A. Yes.

Q. Did you use that standard method in this research work that you have described?

A. Where ever I go I try to improve it.

Q. Do you consider the counts that you have obtained in using this standard milk analysis method with regard to ascertaining the sanitary aspects of the Pure-Pak
975 Container—are those results high or low, with regard to bacterial count?

A. They are very low.

Mr. Schaefer: Excuse me. You are talking about the bacterial count of milk, are you not?

A. No.

Q. What?

A. Containers.

Q. I understood the question to refer to standard methods in milk analysis.

Mr. Gariepy: I asked him if there was such a method of examining milk and examining the bacteria and the board, both.

The Master: Read the question.

(Question read by the Reporter)

Mr. Gariepy: Q. You use the paper bottle in your own home?

A. Yes, sir.

Q. Do you use the glass bottle?

A. Yes, sir.

Q. Have you found any objection from a practical standpoint with regard to the use of the paper bottle?

A. No.

Q. Are you familiar with the United States Public Health Standard Milk Ordinance?

976 A. Yes.

Q. How long have you been so familiar?

A. Ever since it has been put out.

Q. What, in your opinion, are the main objectives from a health and sanitary standpoint of all of these milk ordinances and rules and regulations?

A. The goal is to deliver to the consumer milk of high quality, milk and milk products—and high quality means

clean, low-bacteria counts and freedom from disease bacteria.

Q. When is a milk container considered by milk sanitarians to be sanitary?

A. When it meets the standard prescribed.

Q. Which is what?

A. It varies in the United States Public Health Milk Ordinance, the standard is one bacteria per millimeter capacity.

Q. How much per quart?

A. 1000.

Q. Have you an opinion as to whether or not that is sanitary, these Pure-Pak containers are sanitary?

A. Yes.

Q. After your two years of study and research work?

A. Yes, sir.

Q. What is your opinion?

977 A. My opinion, based on the various studies I made, is that there is an improvement in the sanitary condition of the milk container, over the glass.

The Master: That is not the question. Read the question.

(Question read by Reporter)

Q. Is it sanitary, or what?

A. It is sanitary.

Mr. Gariepy: Q. Describe the merits of the glass milk bottle as it is commonly used in the City of Chicago from a sanitary standpoint?

A. The glass milk bottle, when introduced into the dairy industry, has been a great improvement over the milk in bulk. I think it is sanitary, if the procedures to take care of it are carried out, as recommended.

Q. Describe the merits of this Pure-Pak Container from the same point of view?

A. The Pure-Pak Container is sanitary. A large percentage of them are, according to the standard tests, free from bacteria. Only once in awhile we find one just before filled with milk that it will not meet the standard requirement as to the number of bacteria. In most cases the number of bacteria in the container—in the paraffined empty container—is extremely small. Shall I go into this

978 further?

Q. Go ahead, finish your answer.

A. As far as I am able to study and figure out, it has a

thoroughly protected pouring lip, which is one of the points in a milk container that has been stressed.

Q. Have you performed tests with regard to the pouring lip, Doctor?

A. Yes, sir.

Q. From which you have drawn and adopted this conclusion?

A. Yes, sir.

Q. How long have you performed tests to determine the sanitary aspects of the pouring lip?

A. We performed a number of these tests. The last one we performed this spring.

Q. 1939?

A. Yes, in the spring of 1939.

Q. Was that at the University?

A. At the University.

Q. On the Pure-Pak Container, the same container that the Master has in his hand here now?

A. Yes, sir. These containers were filled with milk, sealed and sent to us. When they arrived, we then performed the experiment to determine the protection of the pouring lip.

979 Q. Who sent them to you?

A. Fieldcrest Dairies, at our request.

The Master: Q. What is this blue that is right inside of this pouring lip and on the angles on the inside of that?

A. This is a sample, to show an answer to problem number two that Dr. Arnold suggested to carry out, and this is what happens when the container is treated with methlyn blue. This container was filled with milk, and after twelve hours, I think it was, in storage the milk was emptied and rinsed out and one percent methlyn blue solution was poured in and kept there thirty minutes and poured out and rinsed with water.

Q. What was the purpose of that?

A. To determine to what extent penetration of the dye will go into the body of the paper, or, I suppose, the thoroughness of paraffining.

Q. Did you perform the same tests with this blue and this dye with regard to ice-cream containers and paper bottle caps?

A. Yes.

Mr. Gariepy: Q. I show you here a small one-quarter pint University of Illinois Department of Dairy. Hus-

bandry Container. Do you use that to sell ice-cream
980 in?

A. Yes, sir.

Q. Did you apply the same tests on this small container that you did on the large container, Dean's Milk Pure-Pak Container?

A. Yes, sir.

Q. What does it show with regard to the application of the blue on the inside?

A. The treatment of paraffining, if any, was very scant. In other words, the whole surface absorbed the methlyn blue.

The Master: Q. Of the ice-cream container?

A. Of the ice-cream container.

Mr. Gariepy: Q. What about these caps I show you, were they submitted to the same tests with regard to this blue that you tried on the Pure-Pak Container?

A. Yes, sir.

Q. What does it show with regard to the paraffining process applied in those?

A. They show that the methlyn blue is absorbed also in these containers—in these discs, rather.

The Master: Q. Did Dr. Arnold ask you to do that?

Mr. Gariepy: Q. Did Dr. Arnold ask you to do that? Answer the question.

A. Not this one, no.

981 Q. He just asked you to try it on the other one?

A. Just on the container for milk.

(Discussion off the record.)

Mr. Schaefer: Q. Dr. Arnold did not ask you to do any of those. Those were all covered by the stipulation, Doctor, and we agreed to take your word on it?

A. Yes, sir.

Q. And this was not at Dr. Arnold's request at all?

A. No, sir.

Mr. Schaefer: Just to keep the record straight.

Mr. Gariepy: Q. These were done as a result of that conference with Dr. Arnold, concerning such procedures?

A. Yes, sir.

Q. In the case of the Dean Milk Containers the methlyn blue was poured into the container?

A. Filled.

The Master: Q. The markings left after the methlyn blue was poured out are only on the angles?

A. Yes.

Q. Or on the folds, you might say?
A. Yes.
Q. And the methlyn blue left no appreciable stain on the walls or the inner walls of the container?
982 A. No. That is right.
Q. None of the blue seems to have come through the container?
A. No.
Q. While in the case of the ice-cream carton, ice-cream container, the blue stuck to the whole inner wall of the container?
A. It shows the covering here is not as thorough.
Mr. Gariepy: Q. What about the drinking cup? This is a little Dixie drinking cup.
A. The problem is the same.
Q. Is that a paraffined cup, too? Feel of it.
A. It has some paraffin treatment, yes, sir.
Q. Did you fill this up, by the way, half full with the blue?
A. I think we filled it up.
The Master: Q. The blue on that shows to have penetrated at the lower half of that paper drinking cup, doesn't it?
A. Yes, sir.
Mr. Gariepy: Mark these two sheets plaintiff's exhibit 55 for identification.
(Two typewritten sheets referred to were thereupon marked by the Reporter "Plaintiff's Exhibit No. 55 for identification.")
983 Q. Have you performed some research work concerning bacterial contamination of milk on the pouring lips of glass bottles, Doctor?
A. Yes, sir.
Q. When did you do that?
A. This particular experiment was done in July of 1939.
Q. Where was it done?
A. It was done at the University of Illinois.
Q. Did you resort to artificial means with regard to contamination, in performing this test?
A. Yes, sir.
Q. What were those means that you used?
A. We prepared bacterial suspension again, put it in an atomizer and sprayed the bottle, the bottle was filled

with milk before this and a cap put on and then we spray the bottle.

Q. Continue, Doctor.

A. We also infected with infectious solution opened, in spray bottles, then we poured the milk out and tried to determine whether any bacteria were present in the milk after it was poured out.

Q. What did that test show, Doctor, concerning the number of bacteria present?

A. The test showed that when bottles were opened
984 with contaminated hands, some of the pourings from the bottle had the germs in, when the pouring lip, the outside rim of the bottle was contaminated.

Q. That is the glass?

A. Yes.

Q. Proceed, Doctor?

A. Then we found in all cases presence of the germs that were put on the rim, when we contaminated the inside of the rim, above the paper disc, then, of course, again we found bacteria present. Then we also took two bottles, one of them with the ordinary cap and one of them with the certified dairy hood in addition on, and submerged them for twenty-four hours in a bucket of water, containing the bacteria, and then took them out and rinsed them off and sterilized them on the outside and we found that some of the bacteria from the suspension seeped in in the milk.

Q. Did you perform tests concerning the sanitary aspects of the pouring lip on the Pure-Pak Container?

A. Yes.

Q. When?

A. A number of times.

Q. When, Doctor? This year or last year?

A. We did some tests this year, this summer.

Q. This year?

A. Yes, sir.

985 Mr. Gariepy: I will have this paper marked as plaintiff's exhibit 56 for identification.

(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 56 for identification.")

Q. Where were these conducted, at the University?

A. Yes, sir.

Q. As shown on plaintiff's exhibit number 56 for identification?

A. Yes.

Q. Were these on containers sent to you by Fieldcrest Dairies, or those that you used in your dairy down there, Doctor?

A. My recollection is that they were sent to us.

Q. Sent to you by Fieldcrest Dairies?

A. Yes.

Q. What tests did you perform to ascertain the sanitary aspects of and sanitary qualities of the pouring lip of the Pure-Pak Container?

A. In this experiment we took—may I correct it, please?

Q. Yes.

A. In this particular table, it was on containers in our study at the University.

Q. All right.

986 A. After they were sealed in and bottled and sealed by the machine.

Q. Yes.

A. But not paraffined.

Q. What did you do?

A. We cut out the area (indicating).

Q. Indicating all around the pouring lip, on the outside?

A. The pouring lip, and again disintegrated the paper into pulp and plated the pulp.

Q. You cut this portion out and disintegrated this portion, did you, Doctor?

A. Yes, sir.

Q. Put it into the disintegrater with sterile water?

A. Yes, sir.

Q. Then what did you do, when you took the count?

A. The count was per gram of the paper, including the pouring lip; it varied; the highest count was 33 per gram of the paper. If I may add, the meaning of it was that it was not any higher than any other part of the container.

Q. Is that, in your opinion, a sanitary condition of the pouring lip?

A. Yes.

Q. Doctor, did you perform some other or addi-
987 tional tests with regard to the pouring lip on the Pure-Pak Container by applying an atomizer?

A. Yes, sir.

Q. When did you do that?

A. That was done in April or March, 1939.

Q. Where was it done?

A. It was done at the University.
Q. Who did it?
A. I did.
Q. Where did you get the containers that you performed this test on?
A. The containers were paraffined and filled with milk and were sent down from the Dean Milk Company.
Q. What did you do when you got those containers, filled with milk?
A. It was these containers that we sprayed with the bacteria, we inoculated, infected this part by spraying with the atomizer.
The Master: What do you mean by "this part"?
Mr. Gariepy: Q. Indicating the gable part, or around the pouring lip?
A. The side where it has a pouring lip was sprayed with heavy bacterial suspension by means of an atomizer, depositing bacteria of a known type on it.
Q. Then what did you do after you sprayed it?
988 A. Then they were opened and milk poured and the milk was examined for the presence of any bacteria that we put on the outside.
Q. What did you find?
A. We examined in one test, 20 containers.
Mr. Gariepy: I will have this sheet marked as plaintiff's exhibit 57 for identification.
(Typewritten sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 57 for identification.")
Q. You are now referring to plaintiff's exhibit number 57 for identification?
A. Yes, making four plates, from the pouring of milk, making altogether 80 plates, and they were all free from bacteria except one. One plate had one of the bacteria present.
Q. Would you say that shows a sanitary or an unsanitary condition of the pouring lip?
A. That shows a sanitary condition of the pouring lip.
Q. Doctor, did you inoculate the containers further by the operator dipping his hands in the suspension, rubbing the surfaces inside of the containers, to ascertain whether they would take the bacteria and the bacteria would survive, or not?
A. Yes, sir.

989 Q. When did you perform such a test that you have described by the operator dipping his hands in the suspension, rubbing the surfaces inside of the containers?

A. This was done in the spring of 1937.

Q. Where was it done, Doctor?

A. At the University of Illinois, while we had the machine there.

Q. What was the bacteria in which the operator had his hands submerged and contaminated?

A. It was the bacillus prodigeosis.

Q. How much of that did you have in the bucket you put your hands in?

A. It varied from several billion, invariably it would be two or three million bacteria per millimeter of the suspension.

Q. What did you do when your hands were put in there and contaminated with the bacteria, what did you do next, Doctor?

A. Next the containers were passed through the machine to be treated, paraffined and sealed.

Q. Your hands were put into the unparaffined containers, or blanks?

A. Yes, sir.

Q. Then they were put in the machine and they were run through paraffin, in the bath?

990 A. Yes, sir.

Q. And down through the cooling system and filled?

A. Yes, sir.

Q. Then you took the count on them?

A. Yes, sir.

Q. What did the count show?

A. The count showed that if you inoculate these containers, the surface of these containers, with heavy bacterial suspension, if you inoculate the containers by dipping your hand in a bacterial suspension containing several hundred million bacteri and then inoculate the containers by rubbing the hands on the inside and then paraffining the containers in the usual way, and seal it, then take it in the laboratory and examine it for the presence of surviving bacteria, we found—

Mr. Gariepy: I will have this sheet marked as plaintiff's exhibit 58 for identification.

(Typewritten sheet referred to was thereupon marked

by the Reporter "Plaintiff's Exhibit No. 58 for identification.")

Q. You are reading now from plaintiff's exhibit number 58, which are your figures and the result of this test?

A. Yes, sir.

Q. All right, what did you find?

991 A. In one test we treated 300 containers. 100 were paraffined at 160 degrees F. 91 were negative and 9 showed the presence of the bacteria. 100 containers were paraffined at 170.

Q. Paraffined at 170 degrees F.?

A. Yes, paraffined at 170 degrees F.

Q. Yes.

A. 99 showed the absence of bacteria, and one showed the presence of one or more bacteria. Those paraffined at 180 degrees F., 98 were free from bacteria and two showed the presence of one or more colonies. Shall I read this?

Q. The right hand column shows the number of what?

A. Bacteria in suspension.

Q. 250 million?

A. Yes, sir, 250 million per m.l. The last of this type of experiments, number five, we inoculated and treated 600 of these containers. 200 of them were paraffined at 180 degrees F; 200 of them were paraffined at 185 degrees F; 200 of them were paraffined at 190 degrees F. Suspension 200 million bacteria per m.l. Of all those, the 600 containers were free from bacteria, as determined by our method.

Q. What does that mean with regard to the effect of paraffining process on the paper board in the paraffin

992 bath?

A. It means this, that when you inoculate the containers very heavily with millions of bacteria and pass them through immediately some of the bacteria may survive.

Q. Did you also inoculate the same container with your hands on the outside?

A. Yes.

Q. And what did the result of that test show, after you had inoculated the container that way?

A. We tried to reproduce the normal handling of the containers as they are handled under ordinary conditions, in actual operations, so that the operator infected his hands by dipping his hands in bacterial suspension.

Q. Go ahead, Doctor.

A. And when all of the loose water dripped off of them,

we took a bundle of them from the carton in which they were shipped to the milk plant and straightened them and put them on the rack, on the machine, and from that point on the machine handled them.

Q. Then, when they got through the machine, what did you do with them?

A. They were not filled with milk. They were 993 sealed, paraffined, went through the machine and we took them into the laboratory and examined them.

Q. What did you find?

A. We found this situation: 300 containers inoculated this way, bacteria suspension 100 million, paraffined at 170 degrees F., 180 degrees F. and 190 degrees F., 100 each—

Q. That is 100 each paraffined at 170, 180 and 190 degrees F., respectively?

A. Yes.

Q. Proceed.

A. We did not find a single container containing the inoculating bacteria. Another test, we again ran 300 containers, paraffined at 170 degrees F., 180 degrees F. and 190 degrees F., 100 each, and again we found no bacteria in the containers. The last test, we inoculated 600 containers the same way, 200 we paraffined at 170 degrees F., 200 were paraffined at 180 degrees F., and 200 were paraffined at 190 degrees F.

Q. What did that show?

A. Paraffined at 170 degrees F., 200 containers were free from bacteria. 200 of the containers paraffined at 180 degrees F. were free from bacteria and 199 of the containers paraffined at 190 degrees F. were free from 994 bacteria. On one of the containers paraffined at 190 degrees F. there was one colony of the red organism.

The Master: O. That is in the case where the bacteria was put on the outside?

A. Yes, and they touched the rim or did more, it is in a pan and he takes them and he had touched the ring.

Mr. Gariepy: Q. That is the inside flaps of the bottle, before they are filled and sealed?

A. Yes.

Q. Outside or inside, Doctor?

A. Here is the way they take them, he touches it (indicating).

The Master: Q. The experiments were conducted before the containers were actually put up in the form that they are in when they contain milk?

A. Yes.
Q. They were just flat?
A. He takes them, and in a regular operation he straightens them out and puts them up in the rack.
Mr. Gariepy: Q. He straightens the edges up so they will go into the machine evenly?
A. Yes.
995 Q. On the rack?
A. Yes. We just asked him to do it as he does it in feeding the machine.
Q. That is the regular function?
A. Yes.
The Master: Do you want to stop here?
Mr. Gariepy: Yes.
The Master: Have you finished?
Mr. Gariepy: I think so.
The Master: We will adjourn until 2:00 o'clock.

(Thereupon, recess was taken until 2:00 o'clock, p. m. on the same day, September 12, 1939.)

996 • • (Caption) • •

Tuesday, September 12, 1939,
2 o'clock p. m.

Met, pursuant to recess.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

997 Mr. Gariepy: If the Master please, Mr. Woodman has been preessed for time to make some inspections since he was called away on that funeral. He is here and we can only call him this afternoon. I have asked Mr. Schaefer's permission to proceed with him now and defer Dr. Prucha's examination.
The Master: How long will he be?
Mr. Gariepy: I won't be very long with him. I have just a few questions with him.
The Master: It is satisfactory to you, Mr. Schaefer, to have Mr. Woodman testify now?
Mr. Schaefer: Yes, that is satisfactory.
The Master: All right.

M. J. WOODMAN called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. What is your name?
A. M. J. Woodman.
Q. What is your address?
A. 1123 Noyes Street, Evanston, Illinois.
Q. What is your business or occupation?
A. I am with the health department there, food and dairy.
998 Q. What department of the health department?
A. Food and dairy.
Q. How long have you been in that department?
A. Twenty-four years.
Q. How long have you been connected with the milk industry?
A. About 60 years.
Q. How old are you?
A. I was born on a dairy farm. We made milk and shipped it to Chicago years ago. That is what I meant when I said I was in the milk business so long. Then I came to Chicago or to Evanston and bought out a milk route and retailed milk in those days, until I went into the health department. That is how I happen to figure up the number of years I gave you.
Q. What are your duties in the health department?
A. In charge of food and dairies and the milk supply of Evanston.
Q. You use the Pure-Pak container that the Fieldcrest Dairies sells milk in up there?
A. We have those delivered up there, yes, sir.
Q. How long have they been used in Evanston?
A. Since the first of January.
Q. This year?
A. Yes.
Q. What research work or check-up do you do on those containers to ascertain their sanitary qualities and
999 sterility qualities?
A. We test the milk as delivered to the consumer weekly. We also make a test of the sanitary condition of the container as it is ready to deliver milk in. They send cases to us, that is, of the packages.

Q. And how often are they sent to you by the Fieldcrest Dairies, to check up on the board?

A. We started checking the first of June and they have been delivered there practically every week.

Q. And are these checks the rinse tests?

A. The rinse tests, yes, sir.

Q. How often do you perform the tests on the milk that comes in the containers?

A. Weekly.

Q. Have you the results of those check-ups and those tests on the milk and on the board with you?

A. I have the check-up on the board. I did not bring my check-up on the milk supply. I didn't know you wanted that. But I have that in my head. I can give you that.

Q. Are these tests on the board, as the samples are delivered to you every two weeks by the Fieldcrest Dairies, conducted in your own laboratory?

A. They are, in the Evanston laboratory.

Q. And under your supervision and control?

1000 A. Under the supervision of the chemists of Evanston.

Q. I show you a carton box of brown paper, which has the title, "Evanston Board of Health, attention of Mr. Woodman." Is that the way you receive the sample from Fieldcrest Dairies every two weeks?

A. It is, yes, sir.

Q. And these other ones that are delivered to the laboratory.

A. Those are the ones that are delivered to the laboratory, through me, to be tested.

The Master: Let the record show that counsel is showing the witness a carton containing something.

Mr. Gariepy: Q. How many blanks are usually in those cartons?

A. There are twelve. Six quarts, three pints and three half-pints that would have milk or cream delivered in them.

The Master: Q. These are just flat?

A. No. These are set up ones, already paraffined, ready to be filled.

Q. I see.

A. Ready to be filled. We have them sent to us that way for testing.

Mr. Gariepy: Q. They are paraffined?

A. They are paraffined and ready to be filled, but in place of filling them they simply put them in the
1001 machine and send them out to us that way.

Q. Will you give us the results of your checks since you began checking these in June, 1939?

A. These are the only two companies. Here are the Fieldcrest.

Q. This is the Fieldcrest?

A. These are Fieldcrest, yes.

Q. Do you also permit the use of other paper containers in Evanston?

A. We do.

Q. What are the names of those containers?

A. Those are put out by the Bowman Dairy Company and the Borden Dairy Company since the first of January.

Q. Will you look at the group of papers, yellow slips here which you handed me and placed on the table, and tell me whether those are your original entry records concerning tests on this paper board?

A. These are the original entries as delivered to me by the city chemist of Evanston, as we have tested them out.

Q. What do they show with regard to the bacteria count on, first, the quart containers?

A. I put all the quarts and pints in together. They are all together here.

Q. What do they show?

1002 A. Here are 101 samples taken. Is that what you mean?

Q. Yes.

A. Thirty-three per cent of these containers with the rinse method show zero, that is, no growth at all. Twenty-nine show 100 or less. That is 29 per cent. Twenty show a bacteria of 100 to 500. Twelve samples out of the hundred show from 500 to a thousand bacteria. Seven out of the hundred show over 1,000. One thousand is the standard for containers, bottles and glasses, empty containers, ready to be filled. One thousand is the standard set by the U. S. Code.

Q. Do you know offhand the bacteria count you found in cartons of milk from Fieldcrest Dairies taken from stores at random from time to time in Evanston?

A. I do.

Q. And what has been the bacteria count in those quart containers, we will say?

A. They ran from 4,000, I believe. The highest this year has been 255,000 in the milk. That is very consistent with any of the other dairies putting out milk in bottles.

Q. Have you had occasion at any time to perform any tests, other than the rinse tests?

A. We have not. You mean on the carton?

1003 Q. Yes.

A. No, sir.

Q. Besides milk cartons in Evanston, are there other cartons used for food products, such as oysters, ice cream?

A. Yes, lots of them.

Q. And do you have any examination or inspection of them?

A. No, sir.

Q. Do you know what board they are made out of?

A. I do not. I say I never examined them. I have examined them for bacteria by the rinse test, that is true, a few years ago, rinsing out the oyster pails and ice cream pails. Of course, these are open. They are not sealed. They are open to contamination. We find, of course, a different picture from these.

Q. Referring to ice cream pails?

A. Yes. We have those in the market, too.

Q. I show you a large brown bucket.

A. Yes.

Q. That is a gallon, or two gallons, I guess.

A. Yes. And they have a five-gallon.

Q. Do you see that paper liner on the inside?

A. Yes.

Q. Do you know what quality of paper that is made out of?

A. No.

Q. You permit the use of these also in Evanston?

1004 A. We do.

Q. Have you had any occasion, since you have been using the paper container in Evanston, to go to the mill or to the fabricating plant, to do any check-up on the quality of board used, or the sanitary methods employed there?

A. No, we never even considered it necessary, any more than I would in the make-up of the bottle. If we consider it necessary we can do it very quickly in the labora-

tory. If the question came up, we could do it, in other words, if we had to.

Q. And how would you do it?

A. Soaking a quantity up and wiping it out. I have got the methods at home. I don't recall them just at present. It is very easily done.

Q. How long have you been familiar with this project or problem of the use of the paper bottles for milk?

A. I think we considered it—I think it was about a year ago it came to our view. We did not allow it at that time. We did not know anything about it.

Q. What did you do before you allowed it to come into use?

A. We investigated it thoroughly, so I would become convinced that it was perfectly proper to allow it.

1005 We had Dr. Prucha's analysis.

Q. Is that Dr. Prucha sitting behind you here, from the University of Illinois?

A. Yes. We also at Cleveland last year devoted the meeting one day on this subject. It was discussed. Cleveland allowed them for five years, and at Saratoga. As far as I recall now, the cities that put them in had no trouble. There was no question *about their being* used. So we considered it and granted them this spring permission to put them in.

Mr. Gariepy: Cross examine.

Cross-Examination by Mr. Schaefer.

Q. You went to Cleveland to a meeting, Mr. Woodman?

A. Yes.

Q. And you talked to Dr. Prucha?

A. I am not saying I talked to Dr. Prucha at that meeting. I talked to Dr. Prucha in Louisville.

Q. Yes.

A. But I had Dr. Prucha's written report on this subject.

Q. And what other investigation did you make?

A. The Saratoga and the Cleveland.

Q. What did you do at Saratoga?

A. The same way, we had the same talk, at dif-

1006 ferent cities where they allowed them, and after they had been allowed for three or four or five years, they

were still allowing them, and no question of discontinuing the delivery of them.

Q. Who ran those meetings?

A. I beg your pardon.

Q. Who organized those meetings?

A. They were the International Association of Dairymen—I forget the name of our association. It is the International Association of Milkmen—of Milk Dealers—not dealers, but health men.

The Master: But what?

The Witness: An international association.

The Master: What is that last word?

The Witness: Health men. I ought to be able to recall that name.

Mr. Gariepy: Take your time and see if you can't remember what it is.

Mr. Schaefer: Q. Milk Sanitarians?

A. Milk Sanitarians, now you have it. You helped me out. Thank you.

Q. Are you a doctor?

A. No, sir.

Q. You testified that seven per cent of the samples from the Fieldcrest Dairies, which you examined during the period since June 1, 1939, were above the permissible range, by a rinse test?

1007 A. Yes, sir.

Q. What did you do about those samples?

A. Nothing.

Q. Do you propose to do anything about them?

A. No.

Q. I see.

A. I want to make a remark. No more than—

Q. No, don't make any remarks. I will ask you the questions, Mr. Woodman.

A. Yes, sir.

Q. Now, you are enforcing in Evanston the United States Public Health Service ordinance?

A. Yes, sir.

Q. What does that contemplate, with respect to the production and processing of milk?

A. I didn't get that exactly.

Q. Do you inspect farms?

A. Yes, sir.

Q. Do you inspect cows?

A. We do.

Q. Do you pay any attention to what the cows eat?

A. Surely.

Q. And what do you look for on the farm?

A. Sanitary conditions in the barns and stables and see whether they come up to those requirements, and the gutters, whitewashing, the condition of the cows, where the milk is kept, cooling water, temperature, cleanliness
1008 of the cans, pails and utensils, whether the milk stools are clean and hung up, all of those details, under the United States Code.

Q. Water supply?

A. Water supply. The wells have to be properly curbed, just according to the United States Public Health Code.

Q. With respect to the pasteurization plants, what do you inspect concerning them?

A. The way the milk comes in and is handled there, the receiving vats, the weighing vats, the equipment, the pasteurizing time, the temperature, to see that it is all kept up to requirements; the bottles, the way they are washed there and also the sanitary condition of the washed bottles. When we take a test, we test also the farmers' milk as it comes to those plants.

Q. Do you make a bacteria test of the farmers' milk?

A. We make a bacteria test of the farmers' milk and we also take the empty bottle ready to be capped and filled.

Q. How do you get those bottles?

A. We take the empty bottles just as they go in the capper, and in place of having them filled with milk we take them empty and test them by the rinse method.
1009 Q. By "we" you mean yourself and those under your direction?

A. Yes. I get the samples and they are taken to the laboratory. We have a laboratory force there that does the practical work.

Q. In the event you find a dairy which is bottling milk in glass bottles running a count above the permissible limit, what do you do?

A. If they are just one or two bottles and they run in the low thousands or eleven hundred or thirteen hundred, an occasional one, I would not do anything at all. If I find them runnning up to twelve hundred or eleven hundred right along consistently, then of course I would take some action.

Q. What would you do?

A. I would tell them there was something wrong with their washing equipment there, their sterilization, that they did not use the proper sterilization, and they did not wash them thoroughly or did not sterilize them thoroughly.

Q. Would you go out or send someone out to look at the plant?

A. We do.

Q. You consistently do that?

A. We certainly do, if there is anything wrong like that, but with one or two samples or three or four
1010 occasionally, we don't pay any attention to that.

Q. What sort of a percentage are you satisfied with?

A. It is just an occasional one. If you look those records over you will see there are hardly any high counts at all. If I find bottles as good as that, I would be satisfied.

Mr. Gariepy: Q. When you say bottles, you mean glass bottles?

A. Glass bottles.

Mr. Schaefer: Q. What percentage of compliance will satisfy you? You say 93 per cent. All right. What percentage would you consider not satisfactory?

A. If I found ten or fifteen per cent running over and then running over consistently. If I am testing milk here today from any good dairy and find a high test, I don't pay any attention to it this week, but if I find it running high next week and the next week, then of course I take action, but just on one high sample alone we don't take action.

The Master: Q. It is more than one high sample; it is a number of samples.

A. If there is a number of samples running high, then I would take action. I have one today that I have got to see tomorrow, because it is running high for, say
1011 three weeks' running. That is what I mean.

Mr. Schaefer: Q. When did you permit the use of the paper containers?

A. I think it was the first of January. I am not certain whether that was December or the first of January. I think it was in December. I am not certain whether it was the first of December last year or the first of January.

Q. 1939?

A. 1938, in December. I didn't look that up. But it was one of those two months.

Q. It might have been December, 1938, or January, 1939?

A. Yes, it was one of those two months.

Q. What tests did you make between January, 1939, and June, 1939?

A. About four hundred, three to four hundred samples.

Q. Where did you get those?

A. We got those from the Borden and Bowman Dairy Company.

Q. And you used—

A. We used the same method.

Q. The Borden Company and the Bowman Dairy Company?

A. Yes.

Q. And you used rinse tests there as well?

A. Just the same. We got a carton like these every other week from the two companies, one every week 1012 from each of the companies.

Q. Where is the paper made?

A. I believe their package is made by the American Can Company. I am not going to swear to that. It is just my impression that it is made by the American Can Company.

Q. Do you know where the paper is produced?

A. I do not. I believe New York, but I would not say that.

Q. It might be Canada?

A. It might be.

Q. That is true of all of the paper used in the distribution of milk in the city of Evanston?

A. That is all. We have not gone into where it was made, no, sir.

Q. Do you consider the source of the paper important in determining the sanitary quality of the paper?

A. Yes.

Q. Why haven't you made any effort to ascertain the source of the paper?

A. Because we find by test that the milk—the empty container has no bacteria, it is facteria free. If it has two or three hundred bacteria, I don't see how it makes any particular difference in that.

Q. You say you find the containers free of bacteria?

A. Yes.

1013 Q. As a matter of fact, you find by your regular tests made since June 1st, that seven per cent of them are over one thousand per container?

A. Yes.

Q. By a rinse test?

A. Yes.

Q. Now, that is not free of bacteria, is it?

Mr. Gariepy: I object to that. That is arguing with the witness, Master.

The Master: Overruled.

The Witness: A. It is the same way with the empty bottle, your Honor.

Mr. Gariepy: Q. Glass or paper bottle?

A. Glass bottle.

Mr. Schaefer: Just a minute. You will have your opportunity, Mr. Gariepy.

Mr. Gariepy: I know, but he says "bottle." I want to know what he means.

The Witness: A. There is no such thing as a sanitary container in any class. I have been through too many of those.

Mr. Schaefer: Q. Now, Mr. Woodman, where are these paper containers that are used in Evanston converted? Are you familiar with that term, "converted"?

A. Conversion. You mean made or fabricated and formed?

1014 Q. I mean made, as distinguished from fabricated and formed?

A. I don't know. I know where they are formed.

Q. Where is that?

A. The Dean Company, I believe, form theirs at a plant at Chemung, Illinois.

Q. Do you know where they are printed?

A. I do not.

Q. Do you know where they are cut and shaped?

A. Do I know what?

Q. Do you know where the shape of the paper blank is cut from the roll of paper?

A. No, I do not.

Q. You have never made any effort to ascertain that?

A. No. We had not even considered it necessary.

Q. Do you consider the conditions of that plant may affect the sanitary quality of the finished container?

A: It perhaps could.

Q. In what way would they?

A. If the board was very inferior and in poor condition, it probably would. If it was fabricated and handled in an unsanitary manner, it probably would. With the paraffining even a poor board, when we find the bacteria as low as it is, we consider it perfectly proper to be used.

Q. Do you know what material this paper board is
1015 made out of?

A. Wood pulp, as I understand it. I don't know whether there is anything else.

Q. You don't know anything beyond that?

A. I have read how they are made and how the wood is ground up and made up into pulp and how it is pressed out. I have read all that. I would not say they are all made that way, but I suppose they are.

Q. Have you ever made successive rinse tests on a paper container?

A. Have we made what?

Q. Successive rinse tests on a paper container.

A. No. Just simply rinse tests on the hundred cc.

Q. Rinse tests on a glass bottle would remove all of the bacteria on the bottle, wouldn't they?

A. I would not think it would.

Q. What?

A. Certainly not.

Q. You would say it would not?

A. Certainly not. In other words, you rinse this glass bottle out with sterile water and then rinse it out with another rinsing, and you might find a bacteria in there or two or three, wouldn't you? I beg your pardon. I didn't mean to ask questions.

Q. Have you ever tried it?

A. Yes, I have.

1016 Q. What did you find?

A. I found some bacteria left on the second and third rinsings.

Q. Did you ever try it with the paper container?

A. Yes.

Q. What did you find?

A. The same thing.

Q. Did you ever conduct any disintegration tests?

A. No, sir.

Q. Has anyone connected with the Evanston Board of Health ever performed any disintegration tests?

A. No.

Q. Who made the decision in the city of Evanston as to whether or not milk might be distributed in paper containers?

A. They left that up to me, the health board, Dr. Tucker, up to my recommendation.

Q. And you made the investigation that you have described?

A. I didn't get that.

Mr. Gariepy: Q. Did you make the investigation that you have described?

A. I did.

Mr. Schaefer: Q. And that is the only investigation you have made?

A. Three years I have been investigating it. Down in Louisville.

1017 Mr. Schaefer: Q. You described the investigation that you performed?

A. I did, after my investigation and all the knowledge I could get. From Dr. Prucha's examination and speech down there on the paper container and the pulp it was made of and the sanitary condition of the pulp, we considered it was proper to allow them.

Q. How are your tests running on the other paper containers?

The Master: Q. The question is, how are your tests running on the other paper containers?

A. I hear him.

Q. Are they running any different from the ones you testified about, or are they about the same?

A. No, just about the same. You can see them there.

The Master: That is all.

Mr. Gariepy: That is enough. Just about the same. That answers it.

The Master: Mr. Schaefer, are you satisfied with that answer, about the same, or do you want to go into detail?

Mr. Schaefer: No, I am satisfied with that.

The Master: All right.

Mr. Schaefer: Q. Has the city of Evanston adopted any regulations with respect to the manufacturing and 1018 handling of paper containers?

A. We have not. Evanston expects to remodel their code before the first of the year, along the lines of the United States Public Health Code, which made some

changes. We expect to remodel all of our Evanston code to correspond with that. We may make some changes in our entire code.

Q. That is, you have at the present time no regulations whatsoever pertaining to the manufacture and handling of paper containers?

A. We have not now, no.

Q. In the event that you found that the manufacture and handling of paper containers was unsatisfactory, what would you do?

A. We would have to take means to control it, of course.

Q. Without regulations?

A. We have the right at any time to—anything that is not satisfactory or sanitary, that we believe might be detrimental to health, the health department, you know, can control the output at any time.

Q. Do you know whether or not the water at the paper mill where this paper board is manufactured is chlorinated?

A. I will have to tell you that I know nothing at
1019 all personally about any of that at the plant.

Q. You don't know whether there is sewage in the water supply or not?

A. Nothing at all.

Q. What kinds of bacteria were these that you discovered by the rinse tests?

A. We made no differentiation of any of them at all. Just simply a bacterial spore. The individual bacteria is not tested for, unless we have some reason for it.

Q. Do you know whether or not the quality of paper is uniform, from a sanitary point of view?

A. I do not.

Q. Your own tests would show you that?

A. No, we don't test the quality of the paper at all.

Q. It would show you whether or not it was uniform?

A. No.

Q. Would not the results of the tests to which you have testified show you whether or not the quality of the paper was uniform?

A. I don't see why.

Q. If it was of uniform quality, wouldn't you have the same bacterial count throughout all of these containers?

1020 A. Not necessarily.

Q. Why?

A. The handling of it, the way they were put up down there, might affect it.

Q. Down where?

A. Where they were fabricated.

Q. Where?

A. Where they were fabricated.

Q. You mean at Chemung?

A. The place where these are put up.

Q. You mean at Chemung, Illinois?

A. I beg your pardon?

The Master: He can't hear you.

Mr. Schaefer: Q. Do you mean at Chemung, Illinois?

A. Yes, I mean that.

Q. I see.

A. I mean, if they were not carefully handled there and well paraffined, then there would be a great difference, of course. A well paraffined container may act on the bacterial count, I believe. That is the standpoint we take. We may be in error, but that is the standpoint we take.

Q. At what temperature are these containers paraffined?

A. They are different temperatures. I don't know what Chemung uses. I believe it is 160 or thereabouts. I am not sure what that is.

Q. The temperature is important, is it not?

A. The temperature is important, yes.

1021 Q. You don't know what it is?

A. I was down there in this plant in Cleveland last year.

Q. I don't care about the plant in Cleveland.

A. I beg your pardon.

Q. Do you know the temperature at which the paraffin is applied to the containers being sold in the city of Evanston?

A. I do not, no.

Q. Do you know how long those containers are immersed in the paraffin?

A. I do not.

Q. Is the time of the immersion in paraffin important with regard to the quality of the paper?

A. It is. If it was not correct I would expect to find it in the bacteria count.

Q. Are you aware that the regulations promulgated by the United States Public Health Service requires immersion

for a period of—immersion in paraffin at a temperature of 180 degrees Fahrenheit?

A. It does now.

Q. Sir?

A. I believe it does now.

Q. Your containers are being paraffined, you believe, at 160?

A. I would not say so.

Mr. Gariepy: I object. He has already answered that.

1022 The Master: Overruled. The record will show what he said.

Mr. Schaefer: Q. You don't know whether your containers are immersed for a period of 30 seconds or for a longer or for a shorter period?

A. I do not, no.

Q. Did you ever attend college, Mr. Woodman?

A. Two years.

Q. Where was that?

A. Agricultural college, Ames, Iowa.

Q. You did not graduate from there?

A. No. I got married and quit school. I was in the dairy division there, in fact.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. Mr. Woodman, how much over the count of one thousand per quart was this seven per cent on the Fieldcrest containers that you testified to?

A. How much?

Q. Over the one thousand in bacteria?

A. I will have to look that up. Maybe twelve hundred or eleven hundred. Here is one eleven hundred, say. Here is one eleven hundred and here is one fifteen hundred. Those are the highest, I believe, in there.

1023 Q. Have you ever had any occasion, since you have been checking these containers and since they have been used in Evanston, to curtail the use of them?

A. Never.

Q. Are the figures that you have given with regard to bacteria counts on the Pure-Pak container here used by Fieldcrest Dairies higher or lower than the counts that you

found for the same period on glass bottles permitted in Evanston?

A. The count on the glass bottles ready to be filled is higher than on the paper containers.

Mr. Gariepy: That is all.

Mr. Schaefer: Just a moment, Mr. Woodman, before you go.

Q. The highest count here was two thousand.

A. Is it? Well, I had forgotten just what it was.

Mr. Gariepy: Is that all?

Mr. Schaefer: That is all.

(Witness excused.)

Mr. Schaefer: Were you through with Dr. Prucha, Mr. Gariepy?

Mr. Gariepy: I didn't get a chance to ask him about the adhesive during the noon hour.

1024 I first want to offer in evidence these exhibits from 46 to 56, inclusive, including Plaintiff's Exhibit 4, which has been heretofore offered on April 27, 1939, in a deposition. I am withdrawing Exhibit No. 48.

Mr. Schaefer: What are you doing; striking all of the testimony with respect to Exhibit 48?

Mr. Gariepy: Yes.

Mr. Schaefer: What?

Mr. Gariepy: Yes, at the witness's request.

Mr. Schaefer: Let us see if we can find it and strike it from the record.

The Master: What is Exhibit 48?

Mr. Gariepy: In regard to what he found in two dairies in the city of Chicago on glass bottles. He said he didn't care to disclose who they were, because of violating confidence that he gained in entering there and doing research work there.

The Master: Do you want to strike all of the testimony?

Mr. Gariepy: Only in regard to 48.

The Master: All of the testimony which is subsequently incorporated in 48?

Mr. Gariepy: That is right.

Mr. Schaefer: And which pertains to those tests 1025 and the results of those tests.

Mr. Gariepy: Only in Exhibit 48 and the two dairies covered by that.

The Master: Yes.

Mr. Gariepy: That is right.

The Master: Do you want to strike it physically, in which case you will have to get in touch with the reporter and have it stricken out.

Mr. Rall: I will see to that, Master.

The Master: These exhibits may be received in evidence.

(Said documents, being EXHIBIT 4, report of Dr. Arnold to the Ex-Cell-O Company, and, EXHIBITS 46, 47, 49, 50, 51, 52, 53, 54, 55, and 56, being sheets showing tests made by Dr. Prucha, were thereupon received in evidence and are attached hereto and made a part hereof.)

The Master: Let us proceed.

Mr. Schaefer: I would like to defer cross-examination of Dr. Prucha until we have had a chance to examine the transcript and examine the results of these experiments. I have talked to Dr. Arnold about it during noon recess, and there are several points he wants to clear up and a number that I do.

1026 Mr. Gariepy: I heard you say, Mr. Schaefer, that you wanted to defer cross-examination for what reason?

The Master: Read Mr. Schaefer's statement, please, Mr. Reporter.

(Mr. Schaefer's statement was read by the reporter as above recorded.)

Mr. Gariepy: I don't think it is fair, Master. He has had the benefit of Dr. Arnold at his right elbow while Dr. Prucha testified. Dr. Arnold is familiar with Dr. Prucha's work. These are matters of public record.

The Master: How much time do you want?

Mr. Gariepy: Then I will want a day or two to check what I have put in. We will never get through.

The Master: Off the record please.

(Discussion had off the record.)

The Master: We will go on next Tuesday, September 19th, at 10:15 a. m.

Mr. Gariepy: We can perhaps use some of the time this afternoon by putting in our stipulations, if the Master please.

The Master: How long will that take?

Mr. Gariepy: About twenty minutes.

The Master: Go ahead.

1027 Mr. Gariepy: I did not expect that they would not cross-examine Dr. Prucha, so I have left those papers

over at the office. It will take just a few minutes to get them over here.

The Master: All right. Take a recess until they come.

(A short recess was here had, after which the proceedings were resumed as follows:)

The Master: You may go ahead.

Mr. Gariepy: It is stipulated and agreed, by and between the parties hereto, by their respective attorneys, that on January 13, 1936, Dean Milk Company made application to the Board of Health for a permit to use single-service containers in the city of Chicago.

That subsequent thereto, on November 5, 1936, said application and request were renewed by Dean Milk Company with the dairy named as C. J. Wieland-Dean Company, covering the use of the same containers.

That on November 10, 1936, both applications were acknowledged as having been received by the Board of Health, by Dr. Bundesen.

That on December 4, 1937, S. E. Dean, as president of the Fieldcrest Dairies, Inc., plaintiff, and as duly au-
1028 thorized agent for it, made application to the Board of Health of the city of Chicago for a permit for the use of single-service containers in Chicago, by letter.

That on January 23, 1939, application was renewed, and on that date the sum of $60 was sent to the acting president of the Board of Health, Dr. Black, in accordance with Section 3087 of the Mayor Kelly milk ordinance, in connection with the plaintiff's request and proposal to use twelve milk trucks for selling milk in paper containers in the city of Chicago.

It will be further stipulated that on January 27, 1939, the acting president of the Board of Health, Dr. Black, acknowledged receipt of said application and also gave the plaintiff an extension of privileges under Permit No. 1521 to sell unpasteurized milk at wholesale in the city of Chicago, this to include Fieldcrest Dairies under the same permit.

On January 27, 1939, the acting president of the Board of Health, Dr. Black, also acknowledged the application of the plaintiff for a permit for its pasteurization plant, located at Chemung, and stated that the matter was under consideration.

1029 On January 31, 1939, final request and application for the use of single-service containers on behalf of

Fieldcrest Dairies was made at the Board of Health, to which last request and renewal no reply was received from the defendant.

Is that stipulation satisfactory, Mr. Schaefer?

Mr. Schaefer: That is agreeable.

Mr. Gariepy: It is further stipulated and agreed, by and between the parties hereto, by their respective attorneys, that if A. T. O'Connor were called as a witness and duly sworn and testified in this cause, he would testify as follows:

That he is the duly elected and acting treasurer and director and officer of the plaintiff corporation; that as such he is familiar with the assets, income and effects of said plaintiff corporation and same are within his personal knowledge and observation; that plaintiff's business is the sale and distribution of milk and milk products in the State of Illinois and elsewhere; that its plant and equipment is located at Chemung, McHenry County, Illinois; that plaintiff is now selling and distributing milk and milk products in forty-six cities and villages in Cook County; and
1030 in other counties in the State of Illinois; that said sales are at retail and wholesale to customers and chain stores in large quantities daily, amounting to over five thousand quarts daily; that all of said sales above are made by plaintiff in "Pure-Pak" single-service paper milk containers in quart and pint measures and said containers are the same in style and quality as plaintiff desires to use in sale of milk in the city of Chicago; that said milk sold is Grade "A" milk and pasteurized at and in plaintiff's plant, inspected and is now approved by the State of Illinois under the statute, Chapter 56½, Illinois Revised Statutes (1937), Sections 16 to 46, and 101 to 111, inclusive, for sale of milk and milk products; that the plaintiff's income from said sales of milk in said containers amounts to $9,000 per month now; that plaintiff owns and holds leases for machinery and equipment used and necessary in connection with said packaging of milk in said containers, representing an investment, together with other necessary trucks and equipment, amounting to $20,000 now; that same were secured and purchased to use in the sale of milk at retail and wholesale in single-service containers in the City of
1031 Chicago; that plaintiff is ready, willing and able to now sell and distribute daily in Chicago, in single-service "Pure-Pak" containers, milk and milk products in

the amount of $1,000 and upwards daily; that refusal to permit said use of the "Pure-Pak" single-service container alone prohibits said sales, and proceeds from same being received by plaintiff in the amount of approximately $7,000 to $9,000 per week at this time; and same have existed since December 1, 1937.

That the attached photostat copies of its charter and certificates are true and are in full force and effect at this time, unamended or modified in any manner, and same are pursuant to the laws of the State of Illinois and Michigan, and that plaintiff corporation is now operating under and by virtue of said charter and the certificate attached hereto, the originals of which affiant holds and will produce to support the facts charged in the complaint; that at the present time said plaintiff operates a large Fruehauf trailer-truck for the delivery of milk from its Chemung milk plant to its distributing plant or station in Melrose Park, Illinois;
1032 that the said Fruehauf refrigeration plant operates automatically in said trailer-truck; that said refrigeration in the other smaller 24 trucks used in the distribution of milk from the Melrose Park distribution plant likewise operates automatically; that said truck is at the present time insulated and refrigerated so that said milk is kept at all times at a temperature of from 40 degrees to 45 degrees Fahrenheit; that said distributing trucks which receive milk from the larger trucks at the milk station or distributing plant contain refrigeration equipment called "ice bunks" which are located inside of the trucks and said bunks contain 100 pounds of wet ice over which a fan pulls warm air across said ice so as to cool the same and to cool the milk; that said large truck distributing milk from the plant to the distributing station has "cold-hold" units therein for cooling said milk and containers and the same are of the same quality and character as used daily in ice cream trucks operating in the city of Chicago; that said "ice bunks" units are called Theurer Units; all of which equipment and stock keep milk in said trucks carrying said "Pure-Pak" containers to stores and other purchas-
1033 ers at a temperature of not higher than 50 degrees Fahrenheit; that said milk is placed in brown fibre cartons containing a dozen quarts each and same are duly sealed in said brown fibre cartons and delivered from the milk distributing truck daily for sale within said period specified on said containers and said deliveries are made to stores and other commercial establishments in said

brown fibre cartons and thereafter sold by said store; that he knows these facts from his own knowledge and can and will so testify if called as a witness.

It is stipulated and agreed by and between plaintiff and defendants herein, that plaintiff is now and for several months, to-wit: from February, 1939, to date, daily selling Grade "A" milk in "Pure-Pak" containers in the following cities and villages located in Cook, Du Page and Lake Counties in Illinois; and that said sales of milk in said containers are by and with the consent or permission of the officials and health authorities of said municipalities, to-wit:

1034 Arlington Heights
Bellwood
Bensenville
Berkeley
Berwyn
Blue Island
Broadview
Brookfield
Calumet Park
Chicago Ridge
Congress Park
Deerfield
Desplaines
Dixmoor
Dolton
East Chicago Heights
East Hazelcrest
Elmhurst
Elmwood Park
Evanston
Fairview
Flossmoor
Forest Park
Franklin Park
1035 Glencoe
Glen Ellyn
Glenview
Greenwood
Hazelcrest
Highland Park
Highwood
Hinsdale
Homewood
Kenilworth
La Grange
Lake Forest
Lansing
Lombard
Lyons
Maywood
Melrose Park
Midlothian
Morton Grove
Mount Prospect
Niles Center
Northbrook
North Riverside
Oak Lawn
Oak Park
Orland Park
Palos Park
Park Ridge
Phoenix
Posen
Riverdale
River Forest
River Grove
Riverside
Robbins
Schiller Park.
South Holland
Stickney
Villa Park
Western Springs
Wheaton
Wilmette
Worth
Winnetka

Subject to objections as to relevancy and materiality on which grounds the right to object is hereby reserved to each of the parties hereto, it is hereby stipulated and agreed between the parties hereto by their respective attorneys of record, without the necessity of further proof, that the facts hereinafter stated are true:

1. The report of the Chief of the Bureau of Dairy Industry, directed to the Secretary of Agriculture of the United States, dated September 1, 1938, for the fiscal year ended June 30, 1938 (O. E. Reed, Chief), contains in the copy thereof officially printed by the Government
1036 Printing Office of the United States the following:

"Single-Service Milk Containers.

"A survey was made of the use of single-service containers for milk in several eastern cities. Single-service containers are used quite extensively for delivery of milk to stores in New York, Philadelphia, and Baltimore. One distributor in a small city also uses single-service containers for delivery to family trade. This distributor was selling about 1,250 quarts to family trade and about 9,000 quarts to stores in paper containers. In New York City over 300,000 units are sold daily in paper containers, principally through the chain stores, and practically all milk handled by chain stores in Philadelphia and Baltimore is in single-service containers.

"While the paper container itself costs more than glass bottles (which average approximately 30 trips) including the washing of the glass bottle, considerable economies can be effected in the delivery to stores if the entire load of the delivery truck consists of milk in paper because of the smaller space and lower weight required as compared with glass.

1037 "Although paper containers are not used to any extent for retail delivery of milk, they are used quite extensively for sale of milk through stores and their use for this type of business seems to be increasing."

2. From and after February 26, 1937, there was in full force and effect in the City of Philadelphia, State of Pennsylvania, an ordinance dealing with the regulation of milk and milk products, which contained among other provisions the following section, to-wit:

"Section 8. The printing and trade marks on all caps and containers employed in the sealing or packing of milk

or milk products, which shall be offered for sale in the City of Philadelphia, shall be so designated as to be proof against deception. All proposed caps and containers shall be submitted to the Board of Health of said City for inspection, and shall not be used for the purposes herein indicated until approved by the Department of Health of said City.

"No milk dealer shall transfer milk from one original container to another except in such cases ex-
1038 pressly authorized by law. No person shall sell or offer for sale any bottled milk except in the original container."

3. Ice cream, butter, lard, cottage cheese and other kinds of cheese, oysters, pickles, soft drinks and liquid coffee are sold daily in the City of Chicago, at retail, in paraffined paper cartons made of virgin spruce pulp; ice cream is sold daily in the City of Chicago by manufacturers of ice cream to retailers of ice cream in metal cans with a thin paraffined paper liner between the ice cream and the metal container; thin paraffined paper is permitted by the Board of Health of the City of Chicago to be placed across the top of metal milk cans underneath the metal cover of such cans; paraffined drinking cups and paraffined paper straws are used daily in the City of Chicago; and paraffined paper liners for dishes in which ice cream is served are also used daily in the City of Chicago. In none of these cases is any objection made by the Board of Health of the City of Chicago, nor are any tests conducted by it to determine the sanitary quality of the paper so used.

4. Prior to the commencement of this suit and
1039 at all times since, the plaintiff, Fieldcrest Dairies, Inc., has sold liquid milk and milk products in "Pure-Pak" containers in the following municipalities in the counties of Cook, Lake and Du Page:

Arlington Heights	Chicago Ridge
Bellwood	Congress Park
Bensenville	Deerfield
Berkeley	Des Plaines
Berwyn	Dixmoor
Blue Island	Dolton
Broadview	East Chicago Heights
Brookfield	East Hazelcrest
Calumet Park	Elmhurst

Elmwood Park
Evanston
Fairview
Flossmoor
Forest Park
Franklin Park
Glencoe
Glen Ellyn
Glenview
Greenwood
Hazelcrest
Highland Park
Highwood
Hinsdale
Homewood
Kenilworth
LaGrange
Lake Forest
Lansing
Lombard
Lyons
Maywood
Melrose Park
Midlothian
Morton Grove
Mount Prospect
Niles Center
Northbrook
North Riverside
Oak Lawn
Oak Park
Orland Park
Palos Park
Park Ridge
Phoenix
Posen
Riverdale
River Forest
River Grove
Riverside
Robbins
Schiller Park
1040 South Holland
Stickney
Villa Park
Western Springs
Wheaton
Wilmette
Winnetka
Worth

It is further stipulated by and between the parties hereto, by their respective counsel, that if S. V. Layson were called as a witness and duly sworn and testified in this cause, he would testify as follows:

That he is milk sanitarian of the Department of Public Health of the State of Illinois with offices at Springfield, Illinois; that the Department of Public Health of the State of Illinois by or under the direction of the affiant has made an inspection of the plant of Fieldcrest Dairies, Inc., located in the village of Chemung, McHenry County, Illinois, approximately 76 miles from the City of Chicago, Illinois, and that said plant and its equipment and apparatus have been approved by the Department of Health of the State of Illinois as complying with the laws and regulations of said state pertaining to milk plants selling liquid milk and

cream to the public at wholesale and retail; that on
1041 or about November 17, 1938, the Department of Public Health of the State of Illinois issued its Certificate No. 395 for the calendar year 1938, and on or about January 18, 1939, issued its Certificate No. 59 for the calendar year 1939, which latter certificate, duly sealed with the seal of the Department of Public Health of the State of Illinois and signed by A. C. Baxter, Acting Director of Public Health of the State of Illinois, is now in full force and effect, and that the language of said certificate last mentioned is substantially as follows:

"The State Department of Public Health considers that the construction and equipment of the pasteurization plant is such that with proper maintenance and operation, the pasteurized milk or milk products will be safe for human consumption. The continued safety of the pasteurized milk or milk products depends upon the continuous proper maintenance and operation of the plant, the responsibility for which rests with the management of said plant."

That the Department of Public Health of the State of Illinois, in reliance upon tests made by the Department of Dairy Husbandry of the University of Illinois by or under the direction of Dr. M. J. Prucha, which tests
1042 have been accepted and relied upon by the said Department of Health, has approved the paper "Pure-Pak" container for the sale of liquid milk and milk products to the public in the State of Illinois; that the Department of Health of the State of Illinois has inspected the pasteurization plant and also the Ex-Cell-O "Pure-Pak" machine located in the plant of the Fieldcrest Dairy at Chemung, Illinois, and has approved the same, but the said Department has not made any independent investigation other than to examine the results of the tests made by the University of Illinois hereinabove referred to of the sanitary properties and efficiency of the said "Pure-Pak" paper container.

The Master: Let the record show that the hearing of this matter is continued to next Tuesday at 10:15.

Whereupon the further hearing in the above entitled cause was continued to Tuesday, September 19, 1939, at 10:15 o'clock a. m.

1043 . . . . (Caption) . . .

Tuesday, September 19, 1939,
10:00 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

1044 Mr. Gariepy: Will you stipulate, Mr. Schaefer, that the two documents I now hand you were sent, he one on yellow paper, by Fieldcrest Dairies, Inc. to Dr. Herman N. Bundesen, President, Chicago Board of Health, City Hall Building, Chicago, Illinois; this one sent by Dr. Herman N. Bundesen to Mr. S. E. Dean, Jr., President, Fieldcrest Dairies, Inc., 20 North Wacker Drive, Chicago, Illinois? Will you examine the letters and state whether you will stipulate?

Mr. Schaefer: Yes, I will stipulate to that.

Mr. Gariepy: It is stipulated by and between the parties that on July 18, 1938 the plaintiff addressed a letter to Dr. Herman N. Bundesen, as follows:

"July 18, 1938

"Dr. Herman N. Bundesen, President,
Chicago Board of Health,
City Hall Building,
Chicago, Illinois.

Dear Dr. Bundesen:

Our respective records contain a letter from the Dean Milk Company to you, as president of the Board of Health, dated November 5, 1936, in which application was made to distribute milk and milk products in paraffined

1045 paper, single-service containers of the Pure-Pak type.

Subsequently, you suggested that studies be conducted by competent authorities to determine the satisfactoriness of such containers from a public health viewpoint, and in accordance with this suggestion we arranged for studies by the following recognized authorities:

Dr. P. H. Tracy, and Dr. M. J. Prucha, of the University of Illinois.

Dr. Alex A. Day, of Northwestern University.

Dr. Lloyd Arnold, University of Illinois Medical School.

These studies were conducted on the Pure-Pak type of

container. The results of these studies were submitted to your Department along with letters from Boards of Health in many other cities and other pertinent information relating to Pure-Pak equipment and materials used in processing.

Under date of December 4, 1937, we advised you, in writing, that the Fieldcrest Dairies, Inc., a wholly owned subsidiary of the Dean Milk Company, had replaced the proposed C. J. Wieland-Dean Company, and that the application for a permit should be transferred to the
1046 new corporation.

Because of the favorable reports made by each of the above-mentioned investigators, we are herewith renewing our request for a permit to use paraffined paper, single-service containers (Pure-Pak type), for milk and milk products.

Fieldcrest Dairies, Inc., will operate on a wholesale basis and will sell milk, cream, buttermilk, chocolate milk, and such other products as are or may be handled by similarly conducted enterprises.

Your attention to this application at an early convenience will be appreciated.

Yours very truly,
Fieldcrest Dairies, Inc.,
President."

Mr. Gariepy: Stipulated by and between the parties that on July 22, 1939 there was received in reply thereto the letter dated July 22, 1938, which is as follows:

"City of Chicago
Board of Health
Office of
Herman N. Bundesen, M.D.
President of the Board.

July 22, 1938.

1047 "Mr. S. S. Dean, Jr.,
President, Fieldcrest Dairies, Inc.,
20 North Wacker Drive,
Chicago, Illinois.

Dear Mr. Dean:

This will acknowledge receipt of your letter of the eighteenth of July, relative to your application to distribute milk and milk products in the city of Chicago in paper containers.

Correspondent and conferences held, in the past, with the organizations and individuals who, you inform us, have been replaced by the concern you represent, definitely indicated our position with respect to the use of paper milk containers in this city.

Referring to the following statement,

'Because of the favorable reports made by each of the above mentioned investigators,'

I beg to advise that our record is not in accordance with that statement. In recent conferences with one of your own committee whom you mention, we are informed that definite standards must be met in the manufacture of the paper and container before this type of package may be considered assuredly satisfactory from a public
1048 health standpoint. We are advised that, as yet, no paper container on the market meets with these necessary requirements.

We are enforcing, in Chicago, the United States Public Health Service Milk Ordinance and look to the United States Public Health Service for technical advice with respect to public health problems, including the safeguarding of our milk supply.

We have been advised by the Surgeon General that, in view of the very evident differences of opinion on the subject of paper containers for milk and milk products, the problems will be brought before the United States Public Health Service Milk Sanitation Advisory Board at its next meeting and that, in the meantime, health authorities are justified in maintaining the status quo.

We wish to again repeat that as soon as unrefutable, scientific evidence is available that will definitely show that there are no health hazards involved in the use of placing milk and milk products in paper containers, we shall be glad, at that time, to give your application every consideration.

1049 Yours very truly,
(signed) Herman N. Bundesen,
President, Board of Health."

Mr. Gariepy: It is stipulated by and between the parties hereto, by their respective attorneys, that for the purpose of a better understanding of the evidence herein, the parties agree that the Master in Chancery, Jacob I. Grossman, may visit the plaintiff's plant at Chemung, Illinois, and the Ex-Cell-O Pure-Pak Machine therein used

by the plaintiff to package milk in Pure-Pak Single Service Containers, and inspect the operation of said plant and said machine.

Mr. Schaefer: That is agreed to.

Mr. Gariepy: I will ask that this single sheet marked for identification as plaintiff's exhibit 51 (page 2).

The Master: It may be so marked.

(The sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 51 (page 2) for identification.")

Mr. Gariepy: Master, before going ahead with the cross-examination of Dr. Prucha, on the part of the defense, I want to ask the witness a few more questions on direct examination.

The Master: Proceed.

1050 MARTIN JOHN PRUCHA resumed the witness stand on behalf of the plaintiffs and testified further as follows:

Direct Examination (Resumed) by Mr. Gariepy.

Q. Doctor, with regard to plaintiff's exhibit 51, testified to by you as shown on page 959 of the record, did you perform any tests subsequent to test number 3, concerning the bacteriacidal property of paraffining?

A. Yes.

Q. Showing you plaintiff's exhibit 51 (page 2) for identification, does that show tests numbers four and five that you performed on that same experiment?

A. Yes.

Q. Was that performed at the same time as number one test?

A. It was performed during one week.

Q. What does it show with regard to the quality of the suspension used in performing that test and the bacteria count?

A. Dr. Arnold's problems, which he requested to be done, if you recall—

Q. We have agreed that Dr. Arnold did not request you to perform anything, Doctor.

1051 A. I mean that was presented to the referees. Now, we agreed on experiment three, that the bacteria will go through the paraffin.

Q. What about test number four, what does it show? That is my question?

A. Test number four shows that when you have about a million and a half bacteria suspension in which you dip the paper and then paraffin it, you can not find—we have not been able to find any bacteria present on the paraffined paper.

Q. What was your finding with regard to the number nineteen shown in test number four, in the left hand column, as to the amount of the bacteria found?

A. Table nineteen, for example, gives the number of bacteria that were deposited on this piece of paper. As explained, we made ten plates from the pulp, disintegrated paper, which was freshly inoculated and that gives us the amount of inoculation on the paper.

Q. How much did you find in the way of bacteria on the paper after that inoculation?

The Master: Wait a minute. What are you talking about—on the paper before paraffin was applied?

The Witness: Yes.

Mr. Gariepy: That is it.

1052 The Master: All right, go ahead.

The Witness: 420 colonies on one plate, multiplied by 100 times—about 42,000 bacteria.

The Master: Q. On what?

A. When the paper was dipped in and allowed to drain, of this size, there were about 42,000 individual bacteria.

Q. You are indicating "this size". State how long that is.

A. 2 inches by 4½ inches.

Q. All right. You take this naked paper, with how many?

A. About 42,000.

Q. 42,000 bacteria?

A. Yes.

Q. And then you take this piece of paper with the bacteria and put it in the same paraffin?

A. No, not this first one. This was examined, unparaffined, to show how many bacteria.

Q. Then what did you do?

A. Then we took another piece or strip of paper, the same size, and paraffined it immediately after it was dipped in the bacterial suspension, inoculating it about to the same extent.

Q. Yes.

A. And we were unable to find, by plating it, that
1053 any bacteria of this organism survived the paraffining.

Q. Whether on the outside or under the paraffin?

A. It was disintegrated completely.

Q. Yes.

A. 21 is the same, just another strip made to check on that. 22, we allowed the strips of paper to dry for one-half hour before we paraffined them and then, 22 is a dry strip, unparaffined.

Mr. Gariepy: Q. It showed what?

A. Within a half hour tremendous reduction in the number of bacteria were recoverable.

Q. How much reduction?

A. 420 to 31.

Q. The difference between 420 and 31?

A. Yes, say up to 90 percent reduction. Then 23 and 22 were just two strips paraffined after they were dried and then disintegrated, and we could not find any bacteria by that method.

Q. What about test number five?

The Master: Just before you go into that test, I have a question:

Q. This number 22, you say that is the count of bacteria after about a half hour had elapsed following the dipping?

A. Yes, unparaffined.

1054 Q. Unparaffined?

A. Yes.

Q. How much time elapsed between the dipping on number 20 and the time that you applied the paraffin? Right away?

A. About one minute.

Q. About one minute elapsed?

A. Yes, sir.

Q. How much time elapsed between the time of the dipping and the time that you tried to find out whether any bacteria survived following the paraffining?

A. It took about three minutes for the paraffin to harden.

Q. Yes.

A. Then it was immediately disintegrated and it was immediately plated.

Q. How long before you started to count the bacteria?

A. The plates have to be incubated three days.

Q. Three days?
A. Yes, about three days.
Q. You say incubated?
A. You saw those plates we had here?
Q. I understand.
A. We put in the nutrient broth and put in the material with bacteria, you don't see it at first, but they grow and develop visible on the plates.
1055 Q. Let's assume that you put in a plate and let it incubate for about three days, would that have any bacteriacidal effect on the bacteria at all?
A. No. The nutrient agar is a food for bacteria to grow.
Q. How much time would you say elapsed from the dipping into the bacteria of the raw paper to the time that you put on the paraffin, about five minutes, would you say?
A. Less.
Q. Less time?
A. When we paraffin the paper wet, about one minute.
Q. What I am trying to get at is whether the bacteria died the same as they did on the other piece of paper, where you said within a half hour after permitting the dipped paper to dry, there were no bacteria there?
A. A few—not many.
Q. One of those, you said, there were none, didn't you?
A. Yes, on the unparaffined.
Q. Yes.
A. Not in this test.
Q. Number 22 gives you the number of bacteria that remained after half an hour of drying?
A. Yes.
Q. What kind of drying was that?
1056 A. Just left in the room at room temperature.
Q. In one-half hour the bacteria had partly disappeared, hadn't it?
A. Quite a large percent of it.
Q. Without any paraffining?
A. Yes, sir.
Q. I was trying to see whether the death of bacteria was due to paraffining or just ordinary temperature?
A. Just ordinary drying.
Q. Just ordinary drying?
A. Yes.
Q. So, in the case of paraffining, you did not try to find

out whether any germs were left, until about three days had elapsed; and I am trying to ascertain whether the death of those bacteria, after three days, were due to the paraffining or were due merely to the lapse of time?

A. May I explain?

Q. Yes.

A. The making of plates, the minute we make the plates, we stop any action in the plates; the bacteria will then grow and they grow until they show visible colonies, which we count, and if they are dead they won't produce colonies.

Q. In the disintegration process?

A. Yes. So that the plates is a method to de-
1057 termine the survival of the bacteria. The minute the plate is poured you stop any action at that point.

Q. If you only take about six minutes from the time you dip the original naked paper in the germ solution?

A. Yes.

Q. Then at the end of six minutes you apply the paraffin, that six minutes is all of the time that you can apply for drying purposes, that is all of the time you can take. You say they really dry only about six minutes, and the only test you have is a half hour, to show how many germs were alive. Now, you say that having arrested the progress of the death of all of these bacteria by putting paraffin and then putting the disintegrated piece of paper in nutrient mixture, then six minutes is all we can say was the time during which the original dipped paper was drying; is that right?

A. The paper that was paraffined wet?

Q. Yes.

A. Yes, except this—I don't know to what extent the paper under the paraffin dried. That paper was paraffined, whether more moisture remained in the paper or not. I didn't catch that. Some of it was driven off in paraffining.

Here is a combination of drying somewhat and of de-
1058 struction of bacteria by paraffining; both operate. The drying was done, not for the purpose to see how many are killed by drying. Ordinarily, a wet container, paraffined, is not satisfactory to paraffin, a wet container, and this was done just for the purpose that the paper would be dry enough so that it would represent normal paraffining, and it took about a half hour for the paper to dry under room conditions.

Q. You are talking now about 22, or 23?

A. Both—all three. We kept these three strips, 22, 23 and 24 after we put them in.

Q. Putting the question to you concretely: In 22 you say after half an hour the germs were partly gone?

A. Yes.

Q. Suppose they had lasted a little bit longer, they might all of them have been gone?

A. Yes.

Q. In this number 23 you applied paraffin about five or six minutes after the naked paper had been dipped into a germ solution?

A. Yes.

Q. Now, I am trying to find out whether the subsequent drying of this paper, under paraffin, would possibly have the result of the death of the bacteria, or whether it
1059 was the paraffin that did it. Now, you say that they partly died at the end of half an hour, and I am trying to find out whether, if you had gone ahead and sealed this paper, so to speak, by paraffining, whether the subsequent drying killed the bacteria, whether you put the paper in a nutrient solution or not; was it the paraffin that killed the bacteria or just the drying that did it?

A. In this test, both operate in paper; paraffin is at these high temperatures a very effective germicidal agent, the high temperature of paraffin, 170 degrees F.

Q. Will you say that if the germs died in an ordinary room temperature, that heating the room would make them die just that much sooner?

A. It would dry quicker, if you raised the paper above a certain point you would have killed them, also.

Q. Then you would have a tendency to dry the bacteria out that much faster, if you raised the temperature of the paraffining?

A. Paraffining kills bacteria? We don't know what kills them.

Mr. Gariepy: Q. 22 is the test with the unparaffined strip?

A. Yes, sir.

1060 Q. 23 and 24 is a test with a strip paraffined?

A. Similar, as 22, except paraffined.

Q. Test number five shows a test that you made in the same bacterial suspension, about how many bacteria were put into that solution?

A. I used 320 million bacteria per cubic m.l.

Q. Was the strip paraffined or not then in test number 23?

A. In test number 25 it was not paraffined.

Q. Was it wet?

A. Yes.

Q. What did it show when you dipped it into this solution, and exposed it, and how long did you expose it?

A. We exposed it to paraffin 15 seconds at 170 degrees F.

Q. Is that 25?

A. 25 was not paraffined.

Q. What did it show as to the amount of bacteria after you had exposed it, dipped it into this strong solution you have just mentioned and described?

A. It showed that a piece of paper had about 5 million bacteria on it after it was dipped in the bacterial suspension.

Q. And how long had you exposed it before making the count and plating it?

A. Again, as soon as I could perform the opera-
1061 tion, a matter of five or six minutes. It was mixed with water and disintegrated immediately and plated, about six minutes all together before the plates were poured.

Q. 26 shows wet paraffined strip?

A. The same type, similar piece of paper, paraffined at 170 degrees F. for 15 seconds.

Q. And it showed then how many bacteria and you plated out how many?

A. The bacteria that we recovered?

Q. Were how many?

A. About 2,000 roughly, in the neighborhood of 2,000 or 1,800.

Mr. Schaefer: Q. What is the factor in there, Doctor?

A. The factor is 100, in both cases.

Q. That is throughout plaintiff's exhibit 51?

A. I think so, yes, because the method I used was to take this paper, 2 inches by 4½ inches, disintegrate it in 200 cubic m.l. of sterile water and take 2 m.l. of the mixture in each of the plates.

Mr. Gariepy: Q. Does number 27 and 28 show wet paraffined strips under the same suspension, or suspension of 3 million 200 thousand per m.l.?

A. The suspension used in test 27 and 28?

Q. On wet paraffined paper?

1062 A. Was the same in test five, except it was diluted a hundred times.

Q. What did it show with regard to the amount of bacteria when you plated it?

A. On one of the strips we found no bacteria. On one of the strips we found one bacteria, and that was on one of the plates.

Q. When you reduced the quality or the severity of the suspension to 32,000 and then dipped wet bacteria strips into this suspension and plated that, what did it show with regard to the amount of bacteria?

A. We found no bacteria present in the disintegrated paraffined piece of paper.

Q. During the month of July, 1939 did you have occasion to perform a test with regard to the bacterial counts on 50 glass bottles at the Ogden Dairy in Chicago, Illinois, as compared with the bacterial counts on 50 Pure-Pak Containers from the same methods from Fieldcrest Dairies?

A. Yes.

Mr. Gariepy: I will ask that this paper be marked as plaintiff's exhibit 59 for identification.

(The sheet referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 59 for identification.")

1063 Q. Where was this test performed, referred to in plaintiff's exhibit 59 for identification?

A. That is test of the paper containers—

Q. Answer the question, Doctor. Where was this test performed, referred to in plaintiff's exhibit 59 for identification? Where was it performed, in Chicago or at the University, or where?

A. The glass bottles were performed right in the milk plant in Chicago.

Q. The Ogden Dairy?

A. Yes, sir.

Q. Where are they located in the city, do you know?

A. On Ogden Avenue, I don't remember the number—it is thirty-eight something.

Q. How did you obtain the bottles, what was the course with regard to picking up the bottles; where were they in the plant?

A. The bottles were traveling from the washing machine and the bottles were washed and sterilized and were traveling to the bottle filler, and as the milk was being filled, and we took it right as it approached the bottle filler.

Q. That is in the regular course of operating the plant?
A. Yes.
Q. How did you obtain the bottles from the plant of the Fieldcrest Dairies, Pure-Pak bottles?
1064 A. These bottles were sent to us from the Fieldcrest, they were paraffined and sealed and sent to us, to our own laboratory and we examined them.
Q. This is your result of 50 tests on each bottle?
A. Yes, 50 bottles examined.
Q. What did it show concerning the bacteria count on the quart size Pure-Pak Containers as to the number of bacteria on that quart?
A. Thirty-six of the fifty bottles—
Q. Which bottles?
A. Of the Pure-Pak bottles—
Q. Showed what?
A. Were sterile, we found no bacteria in them by the standard method.
Q. That is the same standard method you discussed before, the rinse test?
A. Yes.
Q. What did you find on the glass bottles, how many?
A. On the glass bottles there was only one bottle that showed no bacteria.
Q. An absolute absence of bacteria?
A. Yes.
Q. What did the bottles show as to the relative amount of the counts per bottle?
A. I would consider—
1065 Q. The highest was how much?
A. The highest was 8,300.
The Master: Q. On what?
A. On the bottle.
Mr. Gariepy: Q. Glass bottle or paper?
A. On the glass bottle we found one bottle had 8,300 bacteria and 10 of the bottles were above the standards.
Q. Above one thousand?
A. Above one thousand, yes, sir.
Q. And how many below?
A. And 40 were below.
The Master: Q. What is that?
A. 40 were below.
Q. How much is the standard?
A. 1,000 bacteria, for an empty bottle.

Q. What do you mean by above the standard—it contained more?

A. More than a thousand, yes.

Mr. Gariepy: Q. When you referred to standard, did you refer to the standard or suggested standard dictated or suggested by the United States Public Health Service Ordinance of 1,000 per quart bottle?

A. Yes, that is the standard for Grade A Milk.

Q. When you were on the stand before, I asked you
1066 concerning a test of the adhesive used on the Pure-Pak Container?

A. Yes.

Q. During this year did you perform some research work to ascertain the quality and the number of the bacteria counts of the adhesive used on the Pure-Pak Container?

A. Yes, sir.

Q. Where did you get the adhesive?

A. One sample of the adhesive was taken in the milk plant, as the adhesive was being used. The rest of them were sent to us from two companies that manufactured the adhesives used for the containers.

Q. Name them?

A. It is the Arabol Company of Cicero, Illinois.

Q. The Arabol Manufacturing Company?

A. Yes.

Q. The other one?

A. The other one is the National Adhesive Corporation. I forgot their address.

Mr. Gariepy: I will ask that this paper be marked plaintiff's exhibit 60 for identification.

(Paper referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 60 for identification.")

1067 Q. Showing you plaintiff's exhibit 60 for identification, is that the result of the test that you performed concerning the amount of bacteria per gram?

A. Yes.

Q. Will you tell the Master how you performed that test on the adhesive to ascertain the amount of bacteria per gram in it?

A. I weighed one gram of the adhesive and mixed it with 9 m.l. of sterile water until I made an emulsion of it; then I used 1 m.l. of this emulsion in each of five plates.

Q. Yes.

A. And poured that on to count the number of bacteria on it.

Q. What did your count show on five plates with seven different samples?

A. It varied per gram of the adhesive. The highest count obtained, I had 16, and the lowest count I found in bacteria.

Q. 16 bacteria per gram is how much bacteria you would expect to find on the portions of the single-service Pure-Pak Container where the adhesive is applied, taking the quart as an example?

Q. My information is that about 1400 containers
1068 would be paraffined with one pound of adhesive.

Q. You did not answer the question as to how much bacteria you would expect to be contributed to the Pure-Pak Container corners where the adhesive is applied by reason of what you found in this test.

A. Approximately, the highest count sample we had which gave 16 colonies per gram, and one gram would seal, roughly, three containers; therefore, dividing sixteen by three gives you roughly five bacteria per container deposited with the adhesive in the seam.

Q. What is the kind or quality of that bacteria with regard to being non-spore forming, or spore forming, or B-coli?

A. We did not make thorough tests of that point, except that I have recognized some of the bacteria as my friends, so to speak, on the plates. My observation was that they were mostly spore forming bacteria. The other non-spore forming bacteria were also present.

Q. Is that, in your opinion, the quantity that you found contributed by the adhesive, sufficient to present a health problem?

A. I would say no health problem is there.

Q. Suppose there was any penetration of these bacteria into the milk, from the corners of the container, would
1069 that present any health problem?

A. I would say no.

Q. Will you describe the type of bacteria or the character of bacteria that you found present in the sterilized glass milk containers that you examined at the Ogden Dairy in July, 1939, as compared with the bacteria flora or character that you found in the Pure-Pak container?

A. The outstanding difference is that glass bottles after

they are washed and sterilized have somewhat miscellaneous type of bacteria, the non-spore forming bacteria predominating. In the paper container, Pure-Pak Container, the conspicuous thing about the bacteria flora is that the large percentage of the bacteria, if any present, are all spore forming variety.

Q. Which means what with regard to presenting a health problem or not?

A. Which means this, that with the ordinary disease that might be carried by milk, like typhoid, tuberculosis, septic sore throat, undulin fever, are non-spore forming bacteria; and spore-forming bacteria can not be killed, the spores can not be killed by any method, what we call germicidal or bacteriacidal treatment in the milk plant; spores can not be killed.

Q. Are you acquainted with the degree of temperature employed in the Fieldcrest Dairies plant in turning out
1070 of the finished container with milk as to what temperature they use?

A. Yes.

Q. State, first, what temperature that is?

A. The temperature is 170 to 172 degrees F.

Q. Is that 170 to 172 degrees F?

A. Yes.

Q. Have you performed any research work or tests with regard to using a higher degree of temperature, Fahrenheit, above 172?

A. Yes.

Q. What is your opinion with regard to the use or the advisability of using a higher degree of temperature, higher than 172 degrees F?

A. There are two problems connected with paraffining: one is to paraffin the container in such a way as to give it a good paraffin coating, to make it firm. The higher temperature you use, the poorer product you get in that respect.

Q. Is there any other effect of the high temperature other than that?

The Master: Effect on what? You say the higher the temperature of the paraffin, the lower the quality of what?

A. Of the bottles, the higher temperature—when the bottle is paraffined at high temperature, the paraffin
1071 runs off from the walls of the paper and gives you a thin coating, more flexible, not as acceptable in the

industry for milk. In the paraffining at lower temperatures you get more paraffin deposited on the walls.

Q. What do you call low temperature?

A. Temperature 170 degrees F.

Q. What do you call a high temperature?

A. You don't get as good—

Mr. Gariepy: Answer the question:

A. What do you call a high temperature?

A. 180, 190 or 200 degrees F.

Q. Have you performed tests running the machine with paraffin applied at temperatures of 180 and 180 degrees F?

A. Yes.

Q. Is this the result you gave me as your opinion, the result of your observation and experience?

A. Not only observation, that is on examination of the containers, and this is a well known fact in the industry, also.

Q. Have you during the last two years that you made research and study of this problem performed tests with regard to inoculating paper board at the paper mills just before it goes through the hot rolls?

1072 A. Yes, sir.

Q. When did you do that and where did you do it?

A. I carried on experiments in Detroit.

Q. When?

A. That is more than two years and two months ago.

Q. What mill?

A. Detroit Sulphite.

Q. Where did you perform the other tests?

A. I performed the other tests in New Jersey, at Regal Paper Mills.

Q. What was the condition of the water supply, we will say, where the paper board was made at the Detroit Sulphite Mill?

A. The water in the Detroit Mill was rather heavily contaminated with B-coli.

Q. What did you do in performing the test to ascertain the effect of this heating and passing through the rollers on the board at this Detroit Mill, where they used this quality of water?

A. We took samples all through the mill, including up to the point when the layer of pulp—paper to be—started to run over the rollers.

Q. Then what did you do at that point?

A. We did nothing except the water used for dilution of the paper was heavily seeded with B-coli. Naturally, we examined the pulp as soon as it came off of the 1073 rollers.

Q. What did you find as it came off of the rollers at that mill?

A. At no time were we able to find B-coli surviving the treatment as the paper runs over the heated rollers; B-coli bacteria were killed, apparently.

Q. What did you find in the New Jersey Mill that you performed a test on, as to the paper board before it got to and went through the hot rollers, what did you find as to the condition of the board there?

A. In the New Jersey Mill we artificially inoculated the paper at the same point, the layer of paper, with the pulp just before it started to run over the hot rollers.

Q. What did you inoculate it with?

A. With living suspension of bacteria.

Q. Was it heavy or light?

A. Heavy.

Q. What did you do after you inoculated this and it went through the rollers, next, what was your next step?

A. Then we marked the spot, inoculated regions, and let it pass through the rollers and then we cut out samples from the finished paper, the areas inoculated, and examined it for the bacteria that we used.

1074 What did you find?

A. We found that at no time were we able to recover the inoculating organism from the paper.

Q. Which indicates and shows what effect the heating and passing through the rollers has on the board, which is what?

A. It indicates that the paper subjected to the heat, as it runs over the hot rollers, receives very thorough bacteriacidal treatment.

Q. What was the temperature in the rolls when this board went through, when you performed these two tests?

A. The rollers are heated by steam under pressure and they use about 15 to 20 pounds of steam pressure which gives a temperature of about 250 to 260 degrees F.

The Master: Q. Do I understand you to say it does not make any difference how badly affected with bacteria the water is that you use in making paper?

A. The treatment the paper undergoes in running over these hot rollers destroys it.

Q. It wouldn t make any difference if you took water from the sanitary district channel and used it in making this paper?

A. You wouldn't find any of the coli present there.

Mr. Gariepy: Q. B-coli, did you say?

A. B-coli.

1075 The Master: Q. How about odor?

A. Odor?

Q. Yes.

A. Non-spore forming organisms of the kind we are interested in, in dairy sanitation—

Q. You could take water from the sanitary district canal and put it in and use it in making this paper and it would not make any difference so far as health is concerned?

A. Of the paper—well, I say no, if I may thoroughly explain.

Q. Well, go ahead and explain it.

A. Any bacteriacidal treatment is, to some extent, conditioned by the copiousness of the inoculation; the larger the number of bacteria, the more chances there are that some will survive any bacteriacidal treatment. This bacteriacidal treatment of the hot rollers, however, is extremely efficient and I would guess that no matter how heavily seeded the water is with coli bacteria that you use for diluting the pulp, and passed it over the hot rollers, you will not find any coli present in the finished product. I am guessing on that, predicting.

Mr. Gariepy: Q. You did not find any B-coli present in any of these?

1076 A. No.

Q. The paper mill where there was a bad water supply, and the Cherry River Paper Mill, where they had a good water supply?

A. The organisms are the Dr. Frank Strain B-coli.

Q. Resistant to heat?

A. Yes, sir.

Q. Which means it would survive heat and fight off the effect of the heat applied to the paper board so inoculated?

A. We used that organism for testing the efficiency of pasteurizing of milk.

The Master: Q. You are specifying B-coli?

A. Yes.

Q. Are those the only coli that might affect health?

A. No. The organism of B-coli is used in many of these tests because the organism is a non-spore forming organism, it is a little more resistant to heat than organisms like disease organisms like typhoid are when we inoculate milk with that organism and pasteurize it, we reduce the number to a certain point, we say that if typhoid got in they would be killed.

Q. They are not as resistant to heat as the B-coli?

A. Not quite.

Q. So that when you say the B-coli were not
1077 present, you have given us the coli that you think are the most resistant to heat, and if they don't survive, then nothing else could survive; is that correct?

A. Correct.

Q. How about tubercle bacillus?

A. Tubercle bacillus is a little harder to kill than typhoid germs, but not quite as difficult to kill as B-coli or Frank Strain.

Mr. Gariepy: Q. Not as heat resisting?

A. Not quite, that would be my conclusion. I never tested it myself.

The Master: Q. Would you say the amount of coli that you either put into the water directly or the amount of coli present in typhoid approximated the amount of coli that might be present in the sanitary district canal water?

A. We put more, a larger number of bacteria with artificial inoculation on paper than it would receive from any water used.

Mr. Gariepy: Q. Doctor, have you performed some tests with regard to the amount of absorption that there is in the Pure-Pak Container?

A. Absorption, yes.

Q. When did you perform that test, and where?

A. We carried out a number of tests. The first
1078 test we carried out was two years and three months ago.

Q. Where?

A. At the University of Illinois.

Q. Dnd you get the Pure-Pak Containers from the Fieldcrest Dairies?

A. No.

Q. Did you use them in your own dairy?

A. We used a machine there and paraffined them ourselves and carried on tests with them.

Q. Tell the Master how you performed that test to ascertain absorption, and the amount?

A. We filled the container with milk and stored it.

Q. Where?

A. In a refrigerator, in room temperature also, for certain lengths of time, up to 48 hours or thereabouts. Then we emptied the container and rinsed it with water and dried it quickly. We weighed the empty container before and after we emptied the milk and rinsed it with water to remove all of the milk and then quickly dried it with compressed air and then we weighed it again.

Q. And what did you find?

A. We found that the container picked up about two grams in weight.

Q. Which equals about how many drops per quart?

A. About 40 drops.

1079 Q. Did you perform a similar test with regard to the amount of absorption of the paper cap used on the glass bottles?

A. Not in this manner.

Q. Tell the Master how you performed it?

A. We determined one way to measure the possibility of absorption is by treating the container with a solution of dye, like methlyn blue.

Q. You did that?

A. We did that and as I did in some of the samples here the last time, the caps as a rule which are used to close glass bottles do not have as good paraffining as the paper container.

Q. Would you say the absorption on the caps is less or greater per area than that which you found in the board in the paper container?

A. It is greater because the whole surface of the caps are affected in absorption.

Q. Do you know what is accepted by milk sanitarians as the most satisfactory standard method used to determine the efficiency of sterilization of a glass or paper container?

A. Yes.

Q. What is it?

A. May I read it to you?

1080 Q. Do you know it? Tell what you know.

A. It is a rinse test.

Q. Is there any additional test that is considered a satisfactory standard method for ascertaining the sterility, in addition to the rinse test?

A. Do you speak of glass containers?

Q. Yes.

A. That seems to be best available as a test.

The Master: I wanted to ask you a question:

Q. You have been talking here all of the time about germs remaining in the paper and you have said that none would remain, or there would not be any danger to health. How about danger to taste, the effect upon taste of something that might be put into the container?

A. If something would be put into the container that has taste, it would, of course, appear in the milk.

Q. Let's take a contaminated water supply used in the manufacture of paper?

A. Yes.

Q. Now, your tests, according to your testimony, might not reveal the presence of any disease carrying bacteria; now, do you know whether the use of a contaminated water supply might leave odors or tastes that might get into the milk?

1081 A. As I say, we have not come across any containers made that way. If you have a flavor of carbolic acid in the water, it might carry it into the paper.

Q. You are just confirming your testimony to the disease carrying germs?

A. Yes, to a sanitary point. A little flavor in the milk may not have any sanitary value.

Q. Any more than chlorine in the water here?

A. No. That is what I mean.

Q. It might affect the taste?

A. I am concerned mainly with the bacteriology.

Mr. Gariepy: You may cross examine. First, however, I want to offer in evidence these exhibits, plaintiff's exhibit 51 (page 2), plaintiff's exhibit 59 and plaintiff's exhibit 60.

Mr. Schaefer: Why not wait until the cross-examination is completed before offering them?

Mr. Gariepy: I offer them now.

The Master: I will receive them in evidence and you

may make your motion to strike them if you think they ought to be stricken. They may be received.

(Said sheets of typewritten material so offered were received in evidence and were marked, respectively, 1082 "PLAINTIFF'S EXHIBIT NO. 51 (page 2)," "PLAINTIFF'S EXHIBIT NO. 59" and "PLAINTIFF'S EXHIBIT NO. 60.")

The Master: Cross-examine.

Cross-Examination by Mr. Schaefer.

Q. In your direct examination, Doctor, you referred to certain lectures you gave to the inspectors of the Board of Health?

A. Yes, I did.

Q. What was the subject of those?

A. Chlorine sterilization, that is my recollection.

Q. Of what?

A. Chlorine sterilization of dairy utensils and dairy equipment.

Q. You covered only dairy sanitation in those lectures?

A. That is my recollection, the underlying principles of it.

Q. Did you discuss farm sanitation at all?

A. I don't recall, but my guess would be that I did.

Q. You testified with respect to a study concerning sanitary condition of paper mills you made in 1937?

A. 1937, 1938 and 1939, we visited a number of paper mills.

1083 Q. What mills did you visit in 1937?

A. In 1937 I visited the Detroit paper mills, Kalamazoo Vegetable Parchment Mills.

Q. Do they make paper for paper milk containers?

A. Not the Kalamazoo mill, they are specialists on making other types of containers for foods.

Q. What other mills did you visit in 1937?

A. I may have difficulty to answer just as to the date when I visited them. I visited those two. I visited those in 1937 and in 1938, during that year, we confined ourselves to Pure-Pak and we visited the Detroit mill; then about the end of the year visited the Cherry River Paper Mill.

Q. What mills did you visit in 1938?

A. In 1938 I visited two paper mills, the Regal Paper Mills in New Jersey.

Q. Do they make paper for milk containers?

A. Yes.

Q. What concern?

A. For the American Can.

Q. What others?

A. I think that is all I visited.

Q. In 1939 what mills did you visit?

A. In 1939 I did not visit any paper mill.

1084 Q. Then you have enumerated all of the paper mills.

Mr. Gariepy: Wait until he finishes.

Mr. Schaefer: He answered the question, which was what mills. He said he did not visit any in 1939.

Q. You have enumerated all of the paper mills you visited?

A. Yes, I think so.

Q. The purpose of those visits was what?

A. In two of the paper mills I did bacteriological study.

Q. Why?

A. I was carrying on research.

Q. To determine what?

A. To determine the bacteriological problems connected with paper making.

Q. What bacteriological problems did you find?

A. I took samples right through, from the water, I took samples from the pulp and I took samples all in a row from the first to the last stages of paper making. I took the samples from the affluent water.

Q. As a matter of fact, what you were trying to ascertain was the possible sources of bacteriological contamination of paper in the paper mills?

A. Yes, except I would make it a little broader.

Q. How would you phrase it?

A. How would I phrase it?

1085 Q. That is how you phrased it on your direct examination. How would you phrase it now?

A. I was doing research work, control work, and I wanted to find out what the bacteriological problems are in the paper mill in terms of mill sanitation.

Q. Now, what problems did you find?

A. We examined the water.

Q. What I want to know is what are the sources of

bacteriological contamination, and then we will discuss what you did.

A. The water, the pulp, mainly those are the two principal sources of bacteria.

Q. What about the equipment in the mill itself?

A. The equipment may be also, if it is not kept in good order, it may also add some bacteria to the pulp as it passes through.

Q. How would that happen, Doctor?

A. Pardon me.

Q. How would that happen?

A. If, as the pulp and the water pass through the various vats, pipes and machines, there is a tendency for some of the pulp to stick to the edge, above the water line, and if it sticks there, bacteria may grow in it.

Q. As a matter of fact, pulp is a pretty good nourishment for bacteria?

1086 A. Bacteria will grow and increase if it is kept moist.

Q. It would be moist there?

A. Yes.

Q. Then what would happen?

A. Some of the pulp, of course—from that source some of the bacteria would enter the pulp mixture.

Q. Did you run into any problem in connection with a build-up of slime in any of those mills?

A. I did not see any, but that is a problem in the paper industry.

Q. Is the build-up of slime constant in a paper mill at all times?

A. If they don't practice certain procedures, it is apt to.

Q. What are those procedures, Doctor?

A. I can put it this way, if the pulp sticks to the walls and places like that, bacteria will grow in the pulp, and one type of bacteria that grows there is what we call slime producing bacteria, causing the pulp to stick together and to hydrolize it.

Q. Then that mass of pulp may fall down and join the other pulp passing through?

A. Yes.

Q. So that the problem of slime is not constant?

1087 A. No.

Q. It varies from day to day, week to week, and from month to month?

A. If I may make another sentence—

Q. Surely.

A. The problem of slime has been pretty well solved. In other words, the problem of slime is a manufacturing problem and the paper mills do all they can to prevent it, because the minute a bit of slimy pulp enters the flow of pulp, it shows itself in the paper, defect.

Q. You say that is a manufacturer's problem?

A. Yes.

Q. Is it a bacteriological problem, as well?

A. It is, fundamentally, because of the bacteria, a certain amount of bacteria.

Q. Do slime spots affect the bacterial content of the finished container?

A. It might.

Q. As a matter of fact, it would, invariably, wouldn't it?

A. It might if the slime forming organism is spore producing organism, there would be an increase in the paper.

Q. Invariably?

A. I think so.

1088 The Master: Q. Increase in the spore bearing bacteria?

A. In the number, yes, sir.

Mr. Schaefer: Q. That is what would happen—not might—Doctor?

A. I suppose your statement comes close to the facts, it depends on the formation of spores.

Q. At the mills which you inspected, the pulp was made by sulphite cooking process?

A. Sulphite process, yes.

Q. And then it was bleached?

A. Yes.

Q. In your opinion, is the sulphite process more or less sanitary than the process of manufacturing pulp by mechanical means?

A. I would be inclined to believe that the sulphite process of making pulp is more sanitary, or, you might put it—the process sterilizes the pulp, whereas, mechanically, it may not entirely.

Q. Does it make a difference whether or not the pulp is cooked, plated and made into paper in a continuous operation, from a sanitary point of view?

A. If you define "sanitary" as referring only to the

number of bacteria, there is a tendency, when pulp is made and bleached and then stored, a tendency for the few spore forms and what not to increase in stor-
1089 age, the number of bacteria will tend to increase in the pulp from a bacteriological standpoint.

Q. And therefore, from the point of view of producing a paper container with a low bacterial count, the question of whether or not the operation is continuous is significant?

A. I would like to distinguish between sanitary phases.

Q. Answer the question. I made the distinction for you in the question.

A. The question.

Mr. Schaefer: Read the question.

(Pending question read by Reporter.)

Mr. Gariepy: Do you understand the question?

The Witness: Yes.

Mr. Gariepy: Then, answer it.

The Witness: Except the word "significant" is a little strong.

Mr. Schaefer: Q. You don't understand what that means?

A. I understand what you say.

The Master: Q. Does it have any effect, and state whether it is continuous or not?

A. Pulp that has been stored a week or more in moist condition may produce paper with a larger number of bacteria.

1090 Mr. Schaefer: Q. Do you have an opinion as to whether or not public health officials should inspect the paper mills at which paper is made for use as paper containers?

A. I don't think it is necessary.

Q. When did you come to that conclusion, Doctor?

A. After studying the problem for two years and eight months and examining the paper.

Q. That conclusion differs from conclusions which you have expressed formerly, does it not?

A. I would like to hear the conclusion.

Mr. Schaefer: Answer the question.

The Master: Read the question.

(Pending question read by Reporter.)

A. I would like to hear the conclusion.

Mr. Gariepy: I think "formerly" goes pretty far.

Mr. Schaefer: Q. What do you call the statement you just made, Doctor—it is a conclusion?

A. You refer to some previous conclusion, I don't know what it is.

The Master: Q. Have you ever had an opinion that public health officials should inspect these paper producing places?

A. Not quite. May I explain?

Q. Yes.

1091 A. I think not every paper mill is qualified to make paper, and some certification of some kind would be advisable eventually to permit paper mills to make paper for food handling, including paper milk containers.

Mr. Schaefer: Q. Why eventually, Doctor? Why not now?

A. Because our studies have been carried on, we have been helping the paper mills so that the paper mills that supply paper, produce absolutely sanitary paper without the necessity of inspection.

Q. Why should some form of certification be advisable eventually and not be advisable now?

A. It would be advisable. Sanitation is made up fundamentally—

Q. Will you answer that question?

A. I was going to come to it.

Mr. Schaefer: Please read the question.

(Question read by Reporter.)

A. From a sanitary standpoint, it is not essential.

Mr. Schaefer: Will you please read the question again?

(Question again read by Reporter.)

Mr. Schaefer: Q. Please answer the question and we will get along.

1092 A. Sanitation employs two things. I am trying to answer your question, because you can't say yes or no on that. It employs first freedom from disease germs. It employs reduction in miscellaneous kinds of bacteria. It employs cleanliness, those three things, from the standpoint of freedom from disease bacteria and freedom from bacteria, miscellaneous number of bacteria. This is accomplished, we are getting paper that does not need inspection. From the standpoint of aesthetic cleanliness, it is advisable that paper mills be eventually put on good basis on some sort of certification.

Q. It is not advisable at the present time?

A. It is advisable, yes, as soon as things can be organized.

Q. Doctor, in the paper which you read before the 26th Annual Meeting of the International Association of Milk Sanitarians, Louisville, Kentucky, held October 11 to 13, 1937, you made this statement, did you not:

"Milk sanitarians should inspect paper mills and check on the pulp".

A. If you say I made it, if it is there I did.

Q. Did you make it?

Mr. Gariepy: He says if it is here he did.

A. If it is printed, I made it.

Mr. Schaefer: Q. Well, is it? Look and see.

1093 A. Apparently I made it.

Q. That expressed your view at that time, did it?

A. Somewhat, yes.

Q. In what respects did it and in what respects didn't it?

A. Because in any problem of this kind, complicated problem, there are so many branches and angles to the problem, that the only thing you can do, if you want to publish anything, is to present what we call a report of progress of the work, and with the stipulation that you may have the privilege of modifying your conclusions, as the accumulation of the tests go on.

Q. Where is that stipulation here, Doctor?

A. That is in all experimentation. This was more or less progress of experiment than final. I said milk sanitarians should inspect paper mills and check on the paper.

Q. At that time why was it your opinion that milk sanitarians should inspect mills and check on the pulp?

A. Because when I first visited paper mills, some of the paper mills, some of them are the same way.

Q. Some are what?

A. Some of the paper mills, from an aesthetic

1094 standpoint they are all high class, speaking from a standpoint of comparing them to dairy control, dairy sanitation.

Q. They should be compared to dairy sanitation?

A. Yes.

The Master: Q. How can you tell which ones are and which ones are not, unless you inspected them?

A. Well, the inspection, we have worked particularly with the Cherry River Paper Mills, Dr. Sanborn of Geneva, and we have suggested changes.

Q. From an aesthetic point of view?

A. From complete standards, aesthetic and bacteriological, with the result that the paper mill produces high class sanitary product. I don't think it is necessary to go there to keep on inspecting it, aside from getting certification that the paper produced there is produced there, so that the health inspector has a check on it. They should report to somebody somewhere. They do. Samples are taken of paper, and examination made. They put a stamp on so that we know the paper was made there. I don't think it is necessary for the health officer to go there and keep on regular inspection as on the dairy farms.

Mr. Schaefer: Q. What suggestion did you make at the Cherry River Mill?

1095 A. Well, we studied the water.

Q. What suggestions did you make there, Doctor?

A. We suggested that they put plenty of chlorine in the last treatment of the paper by water.

Q. Do you mean at the calender stacks?

A. Yes.

Q. How will you determine whether or not plenty of chlorine is put in the water at the calender stacks unless you inspect them?

A. We don't do it by inspection. We inspect once in a while and the rest of the test, they do it according to suggestions. We have to trust the corporations.

Q. You what?

A. We have to trust, in this question of sanitary control, the milk plants.

Q. Do you call the sanitary control of milk farms and milk pasteurization plants conducted by the City of Chicago a matter of trust?

A. Yes.

Q. You do?

A. To some extent. Your inspector goes on the farm once in two or three months and the rest of the days the farmers do it themselves.

Q. What inspector goes on a farm once in fifteen months?

1096 Mr. Gariepy: He didn't say fifteen months.

Mr. Schaefer: Q. You don't know anything about it.

Mr. Gariepy: I object. He didn't say anything of the kind.

Mr. Schaefer: He is going to say that in a minute.

The Master: Go ahead now, put another question.

Mr. Schaefer: Q. Do you have any knowledge as to how many times farms producing milk for consumption in Chicago are inspected by employes of the Board of Health of the City of Chicago?

A. I couldn't tell you exactly, depending on the farm and what they do there, as I understand.

Q. Do you have any knowledge?

A. Yes, I have some knowledge.

Q. How did you obtain that knowledge?

A. Talking with Mr. Kreuger and with the Board of Health.

Q. Did Mr. Kreuger ever tell you they inspected farms at fifteen month intervals?

A. I didn't say that.

Mr. Gariepy: You said that, Mr. Schaefer.

Mr. Schaefer: The record will show what he said.

Q. Did Mr. Kreuger ever say that to you?

A. Not fifteen months, no.

Q. Do you know of your own knowledge how frequently pasteurization plants in the City of Chicago are in-
1097 spected?

A. No.

Q. Do you know how frequently farms producing milk for consumption in the City of Chicago are inspected?

A. They follow—

Q. Do you know, of your own kowledge?

A. I don't know.

Q. All right. That is the only question pending, Doctor.

A. I would like to modify it.

The Master: Go ahead and modify it.

A. They follow the United States Public Health Ordinance, I understand.

Q. Do you know anything other than what somebody has told you?

A. Except what Mr. Kreuger told me.

Q. That is what I just asked you, do you know of your own knowledge?

A. I did not investigate.

Q. You have not been out there to look at the plants and you have not been waiting to see the inspectors come around?

A. No.

Q All that you know is what somebody at the Board of Health told you, and is that Mr. Krueger?

A. Mr. Kreuger and also from farmers.

1098 Mr. Schaefer: Q. You made this statement in the same article, Doctor:

"The milk sanitarian should inspect and develop some score card for the mill where the paper is made."

A. Desirable.

Q. I read you what it said:

"The milk sanitarian should inspect and develop some score card for the mill where the paper is made."

The Master: You are reading from what?

Mr. Schaefer: The same pamphlet I last referred to.

Q. What do you mean by that statement?

A. I mean to develop some standards, as Dr. Breen had been developing.

Q. How would a score card develop a standard? What do you mean by a score card?

A. It enumerates—any score card enumerates the equipment used, whether the plant complies with the minimum requirements as to the equipment, and it specifies procedures.

Q. Could you have a score card unless you had regulations with respect to which the scoring would be made?

A. I didn't catch the question.

The Master: Read it.

1099 (Question read by the Reporter.)

A. I should say score card would imply sort of a group of requirements.

Mr. Schaefer: Q. You would have to score something, wouldn't you?

A. Yes.

Q. What other suggestions did you make at the Cherry River Mill?

The Master: Q. You mentioned one about chlorining the water?

A. Yes.

Q. What else?

A. I suggested that it would be a good thing if they made the paper in a continuous operation, rather than making the pulp and two or three days later taking the pulp and then making the paper.

Mr. Schaefer: Q. A good thing from an aesthetic point of view?

A. From an aesthetic standard, well, from reducing the bacteria.

Q. How would you determine, without inspection, whether or not that suggestion were complied with?

A. By examination of the paper.

Q. You could tell from the examination of the paper whether or not it was made in a continuing operation?

1100 A. Probably.

Q. You could?

A. Well, if the paper meets the standards, bacteriologically.

Q. Doctor, that is not what I asked you. I asked you whether from a test made of the paper you could tell whether or not it has been made in a continuous operation?

A. You may, and you may not, one hundred percent.

Q. In other words, you can't?

Mr. Gariepy: I object. He has answered. He said you may and you may not.

The Master: Overruled.

Mr. Schaefer: Please read the question.

(Question read by the Reporter.)

A. If the pulp—it is awfully hard to answer a question like that, unless you go a step further. I don't think you could in all cases.

Q. All right, what other suggestions did you make?

A. Well, we suggested that the apparatus throughout the paper mill that handles the paper be put in better clothing.

Q. What?

A. Be dressed in the maner as operators in milk plants are.

1101 Q. Do you mean to wear cleaner clothes?

A. Yes.

Q. How could you determine whether or not the people at the paper mill were wearing clean clothes, without an inspection?

A. I didn't hear the question.

Mr. Schaefer: Read it.

(Question read by the Reporter.)

A. No.

Q. That is, you could not?

A. No.

Q. What other suggestions did you make?

A. I think that is about the extent of the suggestions we raised there.

The Master: You said something about objections or suggestions that might have to do with bacteria, and some that might be merely aesthetic.

The Witness: Yes.

Q. You did not detail the aesthetic suggestions?

A. The last one is an aesthetic.

Q. Are there any other aesthetic suggestions you had?

A. General clean-up, floors and outside of the equipment, we also raised that.

Mr. Schaefer: Q. How could you determine whether that was complied with, without an inspection?

1102 A. We know that it does—without you yourself went there as an inspector?

Q. You couldn't tell?

A. No.

The Master: Q. You couldn't what?

A. You couldn't tell whether they did it or not, by not visiting the paper mill.

Q. You went there for the purpose of carrying out a research concerning bacteria?

A. Yes.

Q. How were you interested in the aesthetic end of it?

A. That is part of sanitation. I presented the case to the company, stating that sanitation implies also an aesthetic phase, that we don't like to have a sandwich handled by dirty hands, like a man dressed nicely when he serves us food, although it may have no relation to sanitation.

Q. Were you there to gather material for the purposes of research, or there as an adviser?

A. Both, we were there to carry on research and, at the same time, we tried to give them what we considered some of the things that should be required.

Q. Who is the "we"?

A. I was there with Professor Tracy at that time.

1103 Were you doing this for the university?

A. Yes.

Q. Or were you being retained by the paper company?

A. No. I did not receive one cent from the paper company. I was interested in this whole question of paper containers and the sanitary and aesthetic angles, and that is just one of our duties, to help milk plants and farms or

anybody connected with the dairy industry, to advise them what they should do to set it up on a high standard.

The Master: Go ahead.

Mr. Schaefer: Q. Now, did you make any other suggestions?

A. So far as I remember, that was about the principal thing. Those were the principal points that we raised with them.

Q. This paper to which I referred is a report of a paper read before the International Association of Milk Sanitarians?

A. Yes.

Q. Are milk sanitarians equivalent to public health officials, interested in the sanitation of milk?

A. Yes, fundamentally, the organization is, the members are, most of them, all of them probably interested in milk and dairy sanitation.

1104 Q. Most of them are public health officers?

A. Probably a large percentage of them.

Q. Where in this article did you indicate to them that you were talking from an aesthetic point of view with respect to milk inspection?

A. I don't think I said anything.

Q. You did not indicate that?

A. No.

Mr. Gariepy: I object. The article speaks for itself. Are you offering it in evidence?

Mr. Schaefer: When I get ready to, I will offer it, if I see fit. Until then, I will handle it this way.

Mr. Gariepy: All right.

The Master: Is there a question pending?

Mr. Schaefer: No.

Mr. Gariepy: I object to any cross-examination on it unless the document is offered and received in evidence. He is going into something entirely different.

The Master: Overruled.

Mr. Schaefer: Q. You expected these people who heard you read that paper, and who read the paper when subsequently published, to consider that these were your suggestions made as a professor of bacteriology?

1105 Mr. Gariepy: I object to what his expectations were. It has no bearing on this case and it is not binding on the Master what they were.

The Master: Overruled.

Mr. Schaefer: Please read the question.

(Question read by the Reporter.)

The Master: Do you understand the question?

A. Yes. We got information and gave information to them and they can do what they please with it. That doesn't quite answer you.

Mr. Schaefer: Q. No, it doesn't, Doctor. You can do better than that.

The Witness: Read the question, please.

The Master: Read the question again.

(Question again read by the Reporter.)

A. Yes, I think that is reasonable.

Mr. Schaefer: As a professor of bacteriology, reporting on research conducted on a project of the University of Illinois.

The Witness: This was a part of the project, yes.

Mr. Schaefer: Q. What caused you to change your mind?

The Master: About what?

Mr. Schaefer: The witness understands—about his conclusions, whether or not paper mills should be inspected.

1106 The Master: All right.

A. I have changed my mind only partly, and what caused me to change my mind was—

Mr. Schaefer: Wait a minute, Doctor.

Mr. Gariepy: He is telling you now.

Mr. Schaefer: Q. Let's find out where you stand now, Doctor, at the present time?

A. At the present time?

Q. Wait a minute. At the present time, from a public health point of view, do you believe that paper mills should be inspected by public health officials, when those mills are producing paper for use as milk containers?

A. My opinion is that, as stated before, some agency should certify the paper mills, but it is not necessary for every board of health, before paper is sold, for a health officer to go through and inspect.

Q. You are talking about mechanics, Doctor, and I am not interested in that. I am interested in whether or not, from the point of view of the inspection of the public health officials, the paper mills which do distribute its products for use as milk containers should be inspected?

A. From a standard—

Q. I am not asking you who does the inspecting, you understand?

1107 A. From the public standpoint

Q. I am asking you from the standpoint of the public health?

A. Repeat the question, please.

(Question read by the Reporter.)

Q. I am asking you whether or not, from the point of view of protection of public health, the paper from which paper containers for milk are produced should be inspected?

A. Yes, it doesn't need to be inspected from paper mills that supply paper now.

Q. Doctor, I don't consider that a complete answer to the question.

A. Why?

Mr. Gariepy: Where is it unsatisfactory or insufficient, tell us, so the witness can give you further answer.

Mr. Schaefer: Q. What are the paper mills?

A. The paper mills that supply the paper for the Pure-Pak Containers.

Q. The paper mills that supply the paper for the Pure-Pak Containers?

A. Yes, sir.

Q. What are those?

A. One mill, now.

1108 Q. Is that so?

A. Yes.

Q. You were not here last week when Mr. Fisher testified that the Gardner-Richardson Company in Ohio is now manufacturing paper for Pure-Pak Containers, were you?

Mr. Gariepy: I object to that. He didn't say he was selling it to the plant in question. I move that this cross-examination concerning this matter be deleted and stricken and ask the Master to rule that further cross-examination about Mr. Fisher, concerning selling paper board to the Fieldcrest Dairies go out. Cross-examination as to that matter has been so held by the Master, and the objection was sustained, because he said he was not selling it to us.

The Master: Did he say he was not selling it?

Mr. Gariepy: Yes, we never bought any paper board.

The Master: Assuming that he did so testify, you can use that in arguing as to this witness' testimony.

Mr. Schaefer: Fisher testified that the Gardner-Richardson Company was manufacturing paper for use as Pure-Pak Containers, that they started from the time of his first

appearance here as a witness, and his remembrance on that, which was, as I remember, last week, he testified they did not sell any paper to the Fieldcrest Dairies. Dr.
1109 Prucha has just testified now that only one mill manufactures paper for use in Pure-Pak Containers. That is what I am directing my question to at the moment.

The Master: If the Fieldcrest does not use any of this paper, how is it material whether it is being manufactured by Pure-Pak Containers or for some one else?

Mr. Schaefer: From whom will they buy tomorrow?

The Master: What is your question?

Mr. Schaefer: I asked him—

The Master: You asked him if he knew. There is no controversy, is there, Mr. Gariepy, that this Ohio concern is manufacturing paper for the Pure-Pak Company, although the Fieldcrest Dairies are not getting any of that paper.

Mr. Gariepy: They are not using any of their paper today.

The Master: Although it is possible or conceivable that they might, in the future.

Mr. Gariepy: It depends on what we decide to do about the board.

Mr. Schaefer: In view of the fact that the Gardner-Richardson Company of Middletown, Ohio is now producing paper for use as Pure-Pak Milk Containers, do you believe that paper mills producing paper for those
1110 containers should be inspected by public health officials?

Mr. Gariepy: I object to that, for the same reason.

The Master: Overruled. You may answer.

A. Yes, some inspection or some certification is desirable.

Mr. Schaefer: Q. Isn't it desirable, also, in the case of the Cherry River Company?

The Master: He stated some certification is desirable, which necessarily implies some sort of certification or some sort of inspection before certification can be had. He didn't say by whom.

Mr. Schaefer: Q. Certification by whom, Doctor?

A. You could have it done by the United States Public Health Service.

Mr. Gariepy: Let him answer. Go ahead.

A. By some individual that would be agreed upon who

knows the industry as well as the sanitary phases that would be agreed upon by the industry as well as by the sanitary organization or organizations.

Mr. Schaefer: Q. Is that a common public health practice to have a man representing the industry to make certification as to conditions that may affect public health?

A. He would not represent the industry. I didn't say that.

1111 Q. I misunderstood you.

A. One that knows the industry and the problems of the industry.

Q. But the man who should inspect the paper mills should be a public health officer?

A. He should be a man agreed upon, it seems to me, by the public health interests and also by the party that is being inspected, to get the most out of the inspection.

Q. Where in the field of public health has that technique of having inspection made by a person agreed upon to do the inspecting?

The Master: If you know, say so, and if you don't know, just say you don't know.

A. Offhand, I don't know.

Mr. Schaefer: Q. You don't know of any such instance?

A. Except that inspections are permitted when it is inspected by some health officer, and it is accepted by another organization.

Q. That has nothing to do with the question of whether or not the inspector is agreed upon by the person to be inspected?

A. My answer to that would be that it is immaterial.

Q. You are not answering anything, Doctor. The question was whether or not you were familiar with that

1112 technique anywhere in the field of public health administration?

A. I would say, offhand, I don't recall any setup.

Q. You have been working in the field of milk sanitation for some thirty years, as you testified?

A. I never thought of that point.

Mr. Schaefer: Would it be agreeable to suspend at this time, Master?

The Master: We will suspend until 2:00 o'clock, p. m.

(Thereupon, recess was taken until 2:00 o'clock, p. m. on the same day, September 19, 1939.)

1113 • • (Caption—) • •

Tuesday, September, 19 1939,
2 o'clock p. m.

Met pursuant to recess.

Present:

Mr. Gariepy,
Mr. Rall, for Plaintiff.
Mr. Schaefer,
Mr. Horan, for Defendant.

1114 The Master: Are you ready to go ahead?
Mr. Schaefer: Yes.

M. J. PRUCHA, a witness called on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Schaefer (Continued).

Q. Dr. Prucha, in the case of the inspection of paper mills at which paper is produced for use in paper containers for milk, why should the inspection be made by a person agreed upon by the mill to be inspected?

A. I didn't say exactly it should. That was my suggestion, that it might be advisable.

Q. Why is it advisable?

A. As a rule, sanitarians don't know anything about paper mills or any industry where there are problems which have to do with things of practical necessity, that a health inspector will not appreciate.

Q. You mean, regardless of the sanitary significance of the things that they do?

A. Well, I wouldn't say it that way.

Q. How would you say it?

A. I would say that the fundamental sanitary fea-
1115 tures of the operations, there should be no compromise on anything there, but outside of the fundamental sanitary features there are a great many things that are often required in an industry, or apt to be required by a man who does not know enough of the industry, who be-

comes what we call a swivel chair artist, not a practical man.

Now, I would say that in the paper making, the sanitary phases, irrespective of anything else, as I pointed out, the treatment that pulp receives when the paper comes off the roll is sanitary, irrespective of what happens there from a real sanitation standpoint. If it has too many bacteria, we can catch it. As to the number of bacteria in the paper, it is sanitary from a pathogenic standpoint.

Q. How can you catch it as to the number of bacteria in the paper?

A. By the test, by disintegration test in the paper.

Q. The sanitary quality of the paper is not uniform, is it?

A. Necessarily not.

Q. Then how can you catch it by disintegration tests?

A. The sanitary quality of paper, as I stated, when it leaves the roller, the paper is sanitary from the standpoint of pathogenic bacteria. From the standpoint of the
1116 number of bacteria in the paper, by the method we have, we can determine that, and not only the paper, but the finished container. We can apply—

Q. But, Doctor—

Mr. Gariepy: Let him finish.

Mr. Schaefer: Q. If the sanitary quality is not uniform, how can you determine the quality by a disintegration test?

A. You are using the words "sanitary quality." I think we ought to define it, so you and I understand what we are talking about.

Q. All right, I will say bacterial content. Do you understand that?

A. Yes.

Q. All right.

A. It has not been uniform. Nothing is uniform.

Q. We are talking about the one thing now.

A. Yes.

Q. Let us confine ourselves to that one thing.

A. Yes.

Q. How can you determine the sanitary quality of the paper by a disintegration test or, rather, the bacterial content of paper by a disintegration test, if the bacterial content is not uniform? It is that simple. Answer it, can you?

1117 A. Your question floors me, because I don't know how to answer that. We determine the sanitary quality of a paper container, a milk container—

Q. We are talking now about the bacterial content, Doctor.

Mr. Gariepy: I object. He is answering the question, or he started to answer it.

The Master: Go ahead.

Mr. Gariepy: Finish it.

The Witness: A. By this method, by determining the number of bacteria in the paper.

Mr. Schaefer: Q. By the disintegration method?

A. It is one of the methods.

Q. If the bacterial content is not uniform, how can you determine it by the disintegration tests?

A. By determining the number of bacteria in it.

Q. On that sample?

A. Yes.

Q. But that does not determine the bacterial content of any container other than that one sample?

A. Well, Mr, Schaefer—

Q. Is that right, Doctor?

Mr. Gariepy: He is answering you. Wait a minute. Let him answer.

The Witness: A. Any determination in scientific
1118 work, we always reason from specific to general. We examine it and conclude the rest of the thing is all right. If paper is made from the same pulp all the way through, if you take three or four or ten samples all the way along the road and examine them, there will be variations, several variations. It is a matter of determining. Irrespective of whether it varies, it is a matter of determination of bacteria.

Mr. Schaefer: Q. How many samples should you disintegrate to determine the bacterial content of a ton of paper board?

A. If it is made continuously, it seems to me three or four samples, and not even that many.

Q. How many?

A. I should say one sample would be sufficient, taken as it comes off the rollers. A ton of papers comes off the rollers in a very short time. Take a sample.

Q. How large a sample?

A. That is a matter of choice.

The Master: Q. What would you choose?

A. The final disintegration, you have to use a small sample.

Q. How big?

A. I use two or three grams as the most convenient.

1119 Mr. Schaefer: Q. How large in inches is that?

A. Pardon me?

Q. How large in inches would that be?

A. Say a two-by-four-inch piece is a fairly good sized sample.

Q. Two by four inches?

A. Yes.

Q. And you would use one of those to determine the quality of a ton of paper?

A. If the paper runs off continuously, I think it would be sufficient to tell you the condition of the paper.

Q. Now, in your work, Doctor, you encountered brownish patches under the paraffin of the finished container, did you not?

A. Yes.

The Master: Have encountered what?

Mr. Gariepy: Brownish patches.

The Master: Go ahead.

Mr. Schaefer: Q. Those were in the paper, under the paraffin?

A. Yes.

Q. And those were apparent by a visual examination of the paper?

A. Yes.

Q. And you made bacterial counts of the paper which contained those brownish patches, didn't you?

1120 A. Yes.

Q. And those containers uniformly showed a higher bacterial count than other containers which were free from those brownish patches, is that right?

A. Not uniformly. There was a tendency—when you have a patch of imperfection in the paper, as we mentioned this morning in regard to the sliminess, you are apt to have higher bacterial counts.

Q. Yes.

A. However, I might add I have not found a single—

Q. You don't need to add anything, Doctor.

Mr. Gariepy: He doesn't want any additional information, Doctor. I will have to ask it on redirect.

The Witness: All right. I am trying to formulate—

The Master: You have answered the question. There is nothing pending now.

The Witness: Yes.

Mr. Schaefer: Q. What causes those brownish spots, Doctor?

A. I don't know personally. I have an idea.

Q. From what do they appear to be caused?

A. They appear to be caused by the slimy bacteria in most cases, I think. A piece of pulp that may adhere somewhere, and these slimy bacterial growths tend to
1121 digest the pulp, changing the color of the pulp.

Q. That may cause a hydrolytic change in the pulp?

A. That is my opinion.

Q. What do you mean by a hydrolytic change?

A. Pulp is wood cellulose, and in wood cellulose there are some bacteria, not many, that will live on the wood cellulose, producing enzymes, which digest the pulp.

Q. That is, it causes decomposition of the finished paper?

A. Yes.

Q. And by disintegration tests made as the paper comes off the roller, could you determine whether or not any of those brownish patches were present throughout that ton of paper?

A. I would say that if you examined the patch you can tell there would be apt to be more bacteria on that piece of paper.

Q. Yes, if you happen, by the laws of probability, to secure, out of a ton of paper, in your two-by-four sample which you disintegrate, one of those patches, you would be able to tell, isn't that right?

A. Yes, I think so.

Q. And if you happen, by the laws of probability, not to secure one of those patches, you wouldn't know?

A. No.

1122 Q. Is that right?

A. That would be true, except in the final examination of the container, if you happen to get it.

The Master: Q. Would there be any bacteria in this patch?

A. I don't believe there was bacteria in every patch of those that I examined. As I stated, there is a tendency that

those patches will harbor some of the bacteria that caused the patch.

Q. Did you ever find any of those patches?

A. I thought so, yes. In other words, there was a higher count in the finished product.

Q. I thought you said that the effect of the heat in the roller or the steam would kill all bacteria.

A. These seem to be mostly spore-forming organisms.

Q. You are now talking about spore-forming organisms?

A. Yes.

Q. Just define again what you mean by spores.

A. There are certain species of bacteria that produce spores, where they live.

Q. What do you mean by spores?

A. Bacteria shrinks in size and becomes dormant. That is a spore, and the spores are very difficult to kill with heat.

Q. You say bacteria shrink in size?

1123 A. Yes.

Q. And form spores?

A. Yes.

Q. They are bacteria then, aren't they?

A. Oh, yes. They are dormant, a dormant stage of bacteria.

Q. Now, a question was asked here just what type of bacteria is more dangerous to health, the spore-forming or non-spore-forming.

A. Non-spore-forming.

Q. They are the more dangerous?

A. Yes. These organisms are, as far as I know, spore-forming.

Q. That is, the organisms that are in these brownish patches?

A. Yes.

Mr. Schaefer: Q. What test did you make to determine that fact, Doctor?

A. Pardon me.

Q. What test did you make to determine that fact?

A. Whether they are spores or not?

Mr. Gariepy: Spore or non-spore.

The Witness: Spore or non-spore?

Mr. Schaefer: Q. Yes.

A. It is a laboratory test. You take the—if you work in a laboratory for thirty odd years, you can recognize

most of them just by looking at them. In addition to
1124 that, you can examine the colony under a microscope. That is the simplest method.

Q. What suggestions did you make when you inspected the paper mill at Detroit?

A. I suggested that they chlorinate the water higher than they did.

Q. For esthetic reasons?

A. No.

Q. Why?

A. To make the water what might be called sanitary, fit to drink.

Q. I thought you testified this morning that the sanitary quality of the water was a matter of no significance.

A. Well, in a way that is true.

Q. In what way is it true and in what way is it not?

A. It is true no matter what water you have. If there are any pathogenic bacteria in that water and the water is mixed with the pulp, you will not find any pathogenic bacteria in the finished paper.

Q. Well, is it or is it not a matter of sanitary significance?

The Master: What is that?

Mr. Schaefer: Let me rephrase that.

Q. Is the sanitary condition of the water used in the paper mill of any sanitary significance with respect to the manufacture of paper containers for the distribution of milk?

1125 A. It is of sanitary significance in a circumstantial way.

The Master: Q. What do you mean by that?

A. By that I mean this: That if they have very polluted water in every faucet in the mill, the water spreads around in the plant, or is apt to, and if there is diseased bacteria in that water, it will tend to—they may appear on the floor, and so forth, as a result of water dripping on, and in handling things, so I do not recommend that paper be accepted from a plant where they do not have clean water.

Q. You mean that the water that would actually get into the paper itself, in the course of manufacture, might not be contaminated, but that contamination from that water might get upon the surface of the paper, after it had been manufactured?

A. That is it. I think so. Yes, that is what I mean. It might, and I agree with you that I don't think we need to take paper from a mill which has bacteria of that kind.

Mr. Schaefer: I haven't expressed any opinion at all, Doctor.

The Witness: Pardon me?

Mr. Schaefer: I have not expressed any opinion.

The Witness: Yes.

1126 Mr. Schaefer: Q. Now, you testified that the paper was completely sterilized while going over the rollers.

A. Yes.

Q. In a mill in which there was B-coli or sewage bacteria present in the water.

A. Well—

Mr. Gariepy: Just answer the question.

The Master: Read the question first.

(Mr. Schaefer's question was read by the reporter as above recorded.)

The Master: What is the answer?

The Witness: A. Yes.

Mr. Schaefer: Q. How long were you at that mill, Doctor?

A. I was there on three different occasions. At one time I spent a week there.

Q. All right. Now—

The Master: What mill is this?

Mr. Schaefer: The mill at Detroit.

Mr. Gariepy: Q. Is this the Detroit mill, Doctor?

A. Yes.

Q. Tell the Master.

A. Yes, at Detroit.

Q. Be specific.

A. It is the Detroit Sulphite Pulp and Paper Mill Company.

Mr. Schaefer: Q. Now, did you take samples of 1127 the water at the calendar stacks of that mill?

A. Yes.

Q. What did you find there?

A. It was the same as the rest of the water.

Q. That is, you found sewage there?

A. We found coli germs in it, yes, the first time we were there.

Q. What sterilization does the paper get after it gets its treatment at the calender rolls?

A. None, except the natural drying.

Q. Do you feel, Doctor, as a professor of bacteriology, that the sanitary quality of that water is of no significance?

Mr. Gariepy: I object. He just answered that, what he thought the significance was.

The Master: Let him answer.

Mr. Schaefer: Read the question to the doctor.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

Mr. Gariepy: I am renewing my objection, Master, on the ground it has already been answered.

The Master: Let him answer it again. Go ahead.

The Witness: A. It is and it is not.

Mr. Schaefer: Q. Go ahead and explain, Doctor.

1128 A. As I said before, the paper, after it is subjected to the hot rollers, will not contain any of the germs of the coli in the paper. They are killed by the heat. In the paper mill itself, if water highly polluted is allowed to be used all through the paper mill, there is an objection there. I would say it is an unsanitary feature in the paper mill.

Mr. Schaefer: Now will the reporter read the witness the question, please?

The Master: I believe he has answered it.

Mr. Gariepy: It is the third time he has answered it this afternoon.

The Master: All right. Let us not make too much record here.

Mr. Schaefer: I would like to have the question and answer read for my own information. If he answered it, I missed it.

The Master: Off the record now. Let us not clutter up the record.

(Discussion off the record.)

Mr. Schaefer: Read the last question.

(The question referred to was read as follows: "Do you feel, Doctor, as a professor of bacteriology, that the sanitary quality of that water is of no significance?")

1129 The Witness: A. I have answered it partly.

Mr. Schaefer: Q. By that water I mean the water used at the calender stacks.

A. I am referring to the water used in that last treatment of the paper, and my opinion is that it is of significance from a sanitary standpoint, if it is polluted.

Q. Why didn't you mention that on your direct examination?

Mr. Gariepy: I object to his arguing with the witness. The witness has answered it.

The Master: Overruled.

The Witness: A. It is of significance to the extent that it will contaminate the paper.

Mr. Schaefer: Q. Why didn't you mention that on your direct examination, Doctor?

A. Search me. I don't know.

Mr. Gariepy: On direct examination I didn't ask him anything about that.

The Witness: Except in addition to it, I would say—

Mr. Schaefer: Never mind.

The Master: Go ahead, if you want to finish it.

The Witness: A. I would add that the paper, as I pointed out, upon drying again will purify itself, so one or two days after it reaches the carton company you 1130 will not find any of those bacteria in it.

Mr. Schaefer: We will come to that, Doctor.

The Witness: All right.

The Master: Q. Just to make the record clear at this point, just what is a calender stack?

A. When paper comes over the hot roller, it is rough, somewhat.

Q. Yes.

A. So to finish it they iron it. They spray or put a little water on it at this point and then again it goes over the hot roller to give it a smooth surface, that is for the calendering.

Q. I understood here off the record that after the calender operation is over or while it was being conducted water was being put upon the paper.

A. Yes.

Q. And that no more heat is put upon it.

A. The rollers are again warm. They are not as hot as the others.

Q. Then the calendering operation would not kill any germs, would it?

A. It kills some. I did not determine that.

Mr. Schaefer: Q. Doctor, you believe that medical

inspection of employees handling the paper in a paper mill should be made, don't you?

A. Yes.

1131 Q. Do you believe also that medical inspection of the employees handling the paper in the carton manufacturing company, what we call here the conversion plant, should be made?

A. Yes.

Q. You believe that certain steps should be taken to see that the paper is properly protected when it is being shipped from the paper mill to the conversion plant, do you not?

A. Yes.

Q. And you believe, similarly, that adequate measures should be taken to protect the containers after they are formed at the conversion plant, do you not?

A. The regular care necessary for the purpose.

Q. You conducted some experiments to show the relative bacteriacidal effect of paraffin and water under equivalent temperatures, didn't you?

A. I made one run, one or two runs on water.

Q. And what was the result of those experiments?

A. I have forgotten what the results were, exactly. I could not quote the figures.

Q. The result was this, was it not, Doctor: The results showed that the hot water treatment is more effective than the paraffin treatment?

A. Yes.

1132 Q. The difference is very pronounced?

A. Yes.

Q. Water at 150 degrees Fahrenheit is more effective than paraffin at 190 degrees Fahrenheit?

A. For the same time.

Q. That statement is correct?

A. Essentially it is correct, as far as I have been able to figure out from the data we accumulated up to that time.

Q. That statement was sufficiently correct so that you were willing to submit the results of that work to the milk sanitarians at their international convention?

A. I felt it expressed the general picture of the problem.

Q. You didn't say that in your article, did you, Doctor?

Mr. Gariepy: Say what?

The Witness: I didn't get that.

Mr. Schaefer: Q. You didn't say that those tests showed merely a tendency in your article, did you?

A. I was giving the results of some tests on that paper.

Q. Have you performed any tests that indicated different results?

A. Yes, some are different.

Q. Now, what were those?

A. Well, this was done two years ago.

Q. Which?

A. The result that is reported here.

1133 Q. Yes.

Mr. Gariepy: Referring to this Louisville paper?

The Witness: Referring to this Louisville paper, yes. We have examined—I had eight men running the tests at various times, in addition to myself.

Mr. Schaefer: Q. What tests?

A. This test on the temperature, influence of temperature.

Q. I haven't asked you anything about the influence of temperature, Doctor.

A. Pardon me.

Mr. Gariepy: I object. He did, Master. He asked the witness if he ran any additional tests since this time and the witness started in to answer and then he says, "I haven't asked you anything." I don't understand that type of cross-examination.

The Master: If the witness understands him—

Mr. Gariepy: Do you understand? He asked you about tests, Dr. Prucha.

The Witness: If we had made additional tests?

Mr. Gariepy: Yes, that is right.

The Master: Just a minute. This is off the record.

(Discussion off the record.)

The Master: Put another question now and start all over again.

Mr. Schaefer: Q. What other tests have you
1134 performed, in addition to those reported in your Louisville paper, with respect to the relative bacteriacidal effect of paraffin and hot water at equivalent temperatures?

A. In respect to relative importance, efficiency, I might say, of hot paraffin and hot water on the destruction of bacteria, we did not continue that particular phase of the experiment.

Q. Have you performed any other tests designed to show the relative efficiency, from a bactericidal point of view, of hot water and paraffin, at equivalent temperatures?

A. Not enough to report. We were concerned with paraffining only.

Q. Then the information which I have just quoted to you from your own article is the only information which you have sufficient confidence in to submit to milk sanitarians on this subject?

A. On the subject of the comparative efficiency of water and paraffin, that is about the only—

Q. That is all I am asking about, Doctor.

A. Yes, that is the only thing.

Q. Is that right?

A. Yes, that is about the only experiment. We did
1135 not think it was necessary to run it.

Q. Now, from a public health point of view, Doctor, at what temperature and for what length of time do you believe that paraffin should be applied to paper containers to be used for the distribution of milk?

A. It is a very hard question to answer in a few words, unless you go into a discussion of it.

Q. Now, I have asked you the question, at what temperature and for what time.

The Master: Read the question.

(Mr. Schaefer's question was read by the reporter as above recorded.)

The Witness: A. In a certain sense I have difficulty in answering the question. A problem like that is very complicated and you require a tremendous amount of evidence and experimentation before you finally arrive at a satisfactory conclusion.

Mr. Schaefer: Q. I see. And that evidence is not available?

A. Well, it is, in a way, the best we have. The evidence is this: That paraffining is done primarily for the purpose of making the paper impervious to milk.

Q. Doctor, I can help you out a whole lot. When I asked that question I said from a public health point of
1136 view. I have not asked you about any manufacturing difficulties. If you will just eliminate that from your mind, you can answer the question simply.

A. Again, the paper as it arrives in the paper plant or milk plant, in the case of this container, already has received—

Q. Just a minute, Doctor.

The Master: Do you want the question read or do you want to repeat it?

Mr. Schaefer: Q. The question I am asking you requires two figures for an answer. At what temperature and for what time do you believe this paper should be paraffined, when it is to be used for milk containers, considering the problem from a health point of view?

A. I believe that a temperature of—

Q. Should be what?

A. A temperature of 170 Fahrenheit, the temperature of the paraffin at 170 Fahrenheit, and an exposure of some twenty seconds.

Q. How many? Twenty seconds?

A. About twenty seconds. I would say the way to do it is to consider it is twenty seconds.

Q. I haven't asked you anything, Doctor. There is no question pending.

1137 Mr. Gariepy: Just answer his questions.

The Witness: Twenty seconds, I say.

Mr. Schaefer: Q. That is your opinion, 170 degrees and twenty seconds?

A. Yes, and twenty seconds.

Q. From a public health point of view?

A. Yes.

Q. Has that always been your opinion?

A. No.

Q. What has your opinion been in the past?

A. My opinion has been, after we carried on the experiment for a while in the laboratory, my opinion, my first suggestion was 180 degrees Fahrenheit for thirty seconds.

Q. Any other suggestions?

A. Do you mean any other temperature?

Q. Any other suggestions that you made? You said your first suggestion was that.

A. Yes.

Q. Now, what were your others or were there any others?

A. I am of the opinion—

Q. No, we are just talking about what your opinion has been in the past. At one time it was 180 degrees for thirty seconds.

A. Yes.

Q. Has it ever been anything else in the past?

1138 A. Yes.

Q. What was it?

A. I have been changing. Sometimes I did not know. The 180 for thirty at that time I placed at the upper limit. Now how far we could go below and at the same time have a satisfactory container at that time, I did not know.

Q. Doctor, I haven't asked you anything about whether you have a satisfactory container or not. I have asked you from a public health point of view. That is all I am asking you to consider. I am as aware of the problem as you are.

A. Yes.

Q. But I want you to consider this from a public health point of view.

A. Yes.

Q. Can you do that?

A. I am trying to.

Q. All right, do. Now, forget whether the container is satisfactory or not.

A. Well, I think I have answered the question, haven't I?

Q. All right.

A. I feel that 170 degrees for twenty seconds makes a satisfactory container.

Q. Did you ever make that conclusion in any scientific journal?

A. No. I am publishing it—I have a manuscript for a bulletin that is going in.

Q. Did you ever publish any time or temperature
1139 other than 185 degrees for thirty seconds?

A. Yes.

The Master: Did you say 185 or 180?

Mr. Schaefer: He said 180. He said 180 was his conclusion. I am asking him now whether he ever said anything other than 185 degrees at thirty seconds.

The Witness: I think I did.

Mr. Schaefer: Q. When?

A. I think I gave a table in that paper.

Q. Here is your conclusion in that paper:

"Paraffining the containers at 185 degrees Fahrenheit for thirty seconds, when the containers are protected as above suggested, will result in a practically sterile container, and a container that is safe to use."

That is what you said, is it not?

A. Yes.

Q. Now, in your other paper—

The Master: What paper was that you just read from.

Mr. Schaefer: That was the Louisville paper and the only one so far to which I have referred.

The Master: Yes.

Mr. Schaefer: Q. Now, in your other paper, which was the paper entitled "Certain Sanitary Aspects of the Use of Paper Milk Containers," which was presented at the
1140 Dairy Manufacturers Conference at the University of Illinois, at Urbana, Illinois, on November 18, 1937, you said this:

"When the paper is so made that it is practically sterile, when it and the containers made from it are handled, packed, transported and stored in such a manner that they will not become contaminated, and when the containers are paraffined at 185 degrees Fahrenheit for thirty seconds or longer, the paper containers will be fully as safe as any container can be made."

Now, at the time you made those statements, Doctor, were you aware of the problems involved in the application of paraffin at high temperatures to paper containers?

A. Not fully.

Q. You were not?

A. No.

Q. You were speaking at this time solely from a public health point of view?

A. I was speaking from experiments that we conducted in—

Q. I am going to go into those experiments, but at that time you were not aware of any mechanical difficulty?

A. I say yes to the question.

Q. You mean, yes, you were not aware?

1141 A. No. We are getting confused.

Q. Were you at that time aware of mechanical difficulties caused by the application of paraffin at high temperatures?

A. Yes. We carried on some tests in the plant, yes.

Q. You were aware of it at that time?

A. Oh, yes.

The Master: Might I ask a question right there, Mr. Schaefer?

Mr. Schaefer: Surely.

The Master: Q. I notice here in this statement that there is a specification not only of 185 degrees Fahrenheit for the paraffin for thirty seconds, but also a number of

other things, before you say that you have a safe container. For instance, you specify that when the paper is so made that it is practically sterile and when it and the containers made from it are handled, packed, transported and stored in such a manner that they will not become contaminated—all those things are prior to the paraffining?

A. Yes.

Q. Now, I thought you said here today that the paraffin itself had the effect of killing the bacteria.

A. It has.

1142 Q. Why specify all these other things in order to have a safe container, then?

A. Setting a high standard.

Mr. Schaefer: Just for esthetic reasons.

Q. Now, let us see, Doctor; you conducted in 1937 certain experiments as to the bactericidal effect of paraffin. In one of those experiments six strips of paper were treated for certain combinations of time and temperature and you used a B-Prodigiosis suspension of two hundred million bacterial per millimeter, and you found that those bacteria were not killed in one minute at 160 degrees Fahrenheit, is that right?

A. If it is there, whatever it says.

Q. I will show it to you.

A. I assume that is the table. I don't recall now just what it was.

Q. You better look at it and see, so we have the record straight.

A. Yes, sure.

Q. That is correct; they were not killed in one minute?

A. Yes, some of them went through on some of the containers.

Q. They all went through in sixty seconds, didn't they?

A. No.

Mr. Gariepy: Some did not.

1143 The Witness: Some did not.

Mr. Schaefer: Q. The majority of them?

A. At 160 I found four.

Q. Out of six?

A. Yes.

Q. That is, the bacteria were not killed in one minute at 160 degrees Fahrenheit?

A. No.

Q. Now, at 170 degrees Fahrenheit the bacteria were not killed in thirty seconds?

A. On those strips, yes, that is correct.

Q. And, of course, obviously they were not killed at 170 degrees Fahrenheit in twenty seconds.

A. That is right.

Q. As a matter of fact, they were not killed at 190, all of them at 190, in twenty seconds, were they?

A. That is the table, whatever is in the table. That is right.

Q. That is, they were not?

A. Yes.

Q. You are aware of the requirements of the United States Public Health Service, with respect to the temperature of paraffin and the time?

A. Yes. You mean for paraffining?

Q. Yes.

A. I didn't know that. It has not been published yet.

Q. Hasn't it?

1144 A. Unless something came up very recently.

The Master: You answered "yes" here to something. Do you want to change it?

The Witness: I thought you referred to the use of temperature in general, as expressed by the United States Public Health Service.

Mr. Schaefer: Q. No, I mean temperature and time with respect to the application of paraffin.

A. No.

Q. You don't know anything about their suggestions? Or let me put it this way: You don't know whether or not they have made any?

A. Well, I heard they are preparing something now.

Q. Do you know whether or not they have published anything?

A. As far as I know, it has not been published.

Q. Yes.

A. As far as I know.

Q. Yes.

A. By the United States Public Health Service, referring to the standard milk ordinance.

Q. While we are talking about these articles, Doctor, you read another paper at the Dairy Manufacturers Conference at the University of Illinois, at Urbana, Illinois, in November of 1938, relatively recent, is that correct?

1145 A. A year ago.

Q. Yes.

A. Probably. I think so.

Q. How long ago it was is a matter of computation.
A. That is right.
Q. You began that article with this paragraph:
"Are paper milk containers sanitary? This question is the same type as the one asked of a married man, 'Have you ceased beating your wife? Answer yes or no.' If the question of this paper should read 'Can paper milk containers be made so that they are sanitary,' then I can answer 'Yes' without any hesitation."
Did you make that statement, Doctor?
A. If it is there, I made it.
Q. (Handing document to the witness.) The first paragraph.
A. Yes.
Q. You did make that statement?
A. Yes.
Q. That is, at that time, as of November, 1938, you were unable to answer the question "Are paper milk containers sanitary?", is that right?
A. The answer must be qualified from saying yes or no, as I pointed out.
Q. That is, at that time you were not able to answer that question?
1146 Mr. Gariepy: I object. He has already answered that.
The Witness: I—
Mr. Gariepy: Just a minute. I have an objection, Doctor.
The Master: Overruled. He may answer. Go ahead.
The Witness: A. We were able to make sanitary containers at that time.
Mr. Schaefer: Q. But at that time you were not able to answer the question "Are paper milk containers sanitary?"
A. I thought I did.
The Master: Let us put it this way:
Q. Did you at that time mean to say that not all milk containers were sanitary? Is that what you mean?
A. I meant to say—
Mr. Schaefer: Paper milk containers, Master.
The Master: What?
Mr. Schaefer: Paper milk containers are all we are talking about here.
The Master: That is what I am talking about.
Mr. Gariepy: Answer the question of the Master.

The Witness: A. Yes. My opinion was that in the paper mill and carton company there must be certain things and when they do them you have sanitary con-
1147 ditions.

The Master: Q. Did you have in mind they had not done them at the time you made that talk?

A. I said as far as the containers we used at that time were concerned, I considered them sanitary.

Mr. Schaefer: Q. I asked you what suggestions you made at the Detroit mill, Doctor, and you answered that you suggested that the water be chlorinated. What other suggestions did you make?

A. As far as I could see, there were not many other suggestions that we made.

Q. You did not make any others?

A. I did not think it was exactly—

Mr. Gariepy: Doctor, just answer his question. Did you make any other suggestions, yes or no.

The Witness: A. As far as I know, no.

Mr. Gariepy: All right.

Mr. Schaefer: Q. What suggestions did you make at the Regal Paper Mill, in New Jersey?

A. I didn't make any there.

Q. You did not?

A. No.

Q. I don't know whether I understood you correctly or not this morning, Doctor. I thought you said that whether or not a person was serving you food with dirty
1148 hands was a matter of esthetics. Was that correct?

A. Fundamentally, that is correct.

Q. No more significance than that?

A. No, fundamentally not. And only to this extent: We figure that if you are dirty, you are apt to have more bacteria and perhaps there may be a little more chance for harmful bacteria to be present.

Q. Did you ever hear of typhoid carriers?

A. Yes.

Q. You know they present a considerable problem, don't you, from a public health point of view?

A. Yes.

Q. We run into them in restaurants all the time.

A. But it is clean hands that may do it too.

Q. Clean hands that may do what?

A. That may also do it.

Q. Also do what?

A. Contaminate food, carry typhoid germs.

The Master: What will do it?

The Witness: Clean hands.

The Master: Clean hands?

The Witness: Yes. In other words, we have two types of cleanliness in this problem. One is esthetic and one is sanitary.

1149 Mr. Schaefer: Q. The matter of washing hands is esthetic?

A. It is both.

Q. Did you ever hear of amebic dysentery being transmitted by manual contact?

A. Yes, absolutely.

Q. Then the matter of cleanliness of handlers of food is in your opinion now, as a professor of bacteriology at the University of Illinois, a matter of esthetics?

Mr. Gariepy: I object. He just answered it. He said it is both.

The Master: Let him answer.

The Witness: A. If I may elaborate on it, it is both.

Mr. Schaefer: Q. Then it is not simply a matter of esthetics?

A. This visible dirt is fundamentally esthetics. The dangerous germs on the hands and anywhere else are not visible.

Q. On your direct examination, in Plaintiff's Exhibit No. 46, you presented the result of what you termed a study on the self-purification of paper. You testified that you used two-by-four-and-a-half-inch boards in that test.

A. Correct.

Q. How thick was that board?

A. That was .017 of an inch.

1150 Q. Commonly referred to as 17 point board?

A. Yes.

Q. Now, that strip of paper which you used had more exposed edges than you would find in a paper blank for a milk container, in proportion to its area, hadn't it?

The Master: Will you read that question?

(Mr. Schaefer's question was read by the reporter as above recorded.)

The Witness: A. That is correct, I think.

Mr. Schaefer: Q. Are the edges more or less absorbent than the other surfaces?

A. I am not certain.

Q. You don't know whether calendering the paper has

any effect on absorbency or not? The edges of the paper are not calendered, are they, obviously?

A. This way (indicating)?

Q. That is right.

A. No.

Q. The rest of the paper is?

A. Yes.

Q. Do you know whether that has any effect or do you know whether or not the calendering operation has any effect on the absorbency of the paper?

A. No, I do not.

Q. You don't know whether or not that is one of the reasons why they calender? Just say so, if you don't

1151 know.

A. My understanding of calendering is to make the paper smooth, to press down the points of the pulp that stick out. But I am not a paper maker, so there may be some other reason.

Q. Now, the bactericidal effect of the rollers in the paper mills to which you have testified is due in a very large degree to the removal of water from the paper, isn't that so?

A. No. It is the heat.

Q. How much water remains in a piece of paper board after it comes off the rollers?

A. I can't tell you. I was told. I never tested it. But it is a matter of three per cent or thereabouts. I would have to guess. I don't recall.

Q. Well, assume that it is three per cent. That leaves you with a paper board of considerable water-attracting power, doesn't it?

A. I don't know on that point.

Q. I see.

A. Whether it would or would not.

Q. In that test you applied bacteria by dropping the paper plaques in a suspension of B-Prodigiosis. Does that truly represent the normal condition in which those bacteria would find their way onto that board?

1152 A. It might. Contaminated water would drop on the paper, maybe.

Q. When contaminated water drops on the board, it is not entirely saturated, is it?

A. No.

Q. Normally, if you were to find board contaminated, say, by handling or by droplets from the nose or mouth—

A. Yes.

Q. (Continuing.) —or by handling, again, with sweat secretions—

A. Yes.

Q. (Continuing.) —or by secretions from the nose or throat—

A. Yes.

Q. (Continuing.) —or saliva or by contamination from urine or feces—

A. Yes.

Q. (Continuing.) —by those conditions the bacteria would be deposited on the paper, together with food substances and protective substances, is that right?

A. Yes, there is some truth in it.

Q. They would be protected against drying to an extent—

A. To some extent.

Q. (Continuing.) —to an extent quite different 1153 than that in the experiment to which you testified?

A. We carried some experiments on that point.

Q. It would be to a different extent?

A. Pardon me?

Q. It would be to a different extent?

Mr. Gariepy: Do you understand the question?

The Witness: A. I would like to give you the rough results of the experiments that we conducted, to bring the point out. I would add, or may I add on this experiment, this was not water suspension on bacteria in all of those studies. I recognize that plaque and that in that study that poor water may act differently. We always put 12 per cent skim milk in the bacteria suspension, so that these plaques were dropped in bacterial suspension of sterile water, to which one per cent of sterile milk was added, so there was a film of milk there.

Mr. Schaefer: Q. One per cent of what? Of sterile milk?

A. Sterile milk, yes.

Q. Now, in that test you reported that you used a bacterial suspension of six hundred million bacteria per millimeter, is that right?

A. Yes.

Q. Now, you performed another test, which you 1154 reported in Plaintiff's Exhibit 51, in which you also inocculated plaques by dropping them in a B-Prodigiosis suspension?

A. Yes.

Q. And in each case you reported the bacterial count of the plaque immediately after you removed it from the suspension?

A. Yes.

Q. Now, in Test No. 46 you used a suspension of 600,000,000 bacteria per millimeter?

Mr. Rall: That is Exhibit 46.

Mr. Schaefer: That is right, Exhibit 46.

Mr. Rall: Yes.

Mr. Schaefer: Q. You used a suspension containing 600,000,000 bacterial per millimeter, and when you tested those plaques immediately after they were removed from the suspension you had uniform counts on each of the ten plaques of 14,000,000 bacteria?

A. Yes.

Q. Now, when you did the same thing with the experiments which are reported as Exhibit 51, you used a much stronger suspension, one of 2,1[illegible],000,000 per millimeter?

A. Yes.

1155 Q. And then you counted the colonies on the plates immediately after you removed them from the suspension. You did not get uniformity?

A. No.

Q. You got counts far less than you got in the test reported in Exhibit 46?

A. Yes.

Q. You got counts varying from 50,800 on the lowest of the ten plates to 106,000 on the highest of those ten plates, is that correct?

A. If it is there, that is right.

Mr. Gariepy: Look at it.

Mr. Schaefer: Q. I want you to watch this with me, Doctor.

A. Yes. I assume he is reading it correctly.

Q. Stop there and read it so far.

A. Which one?

Q. Right there (indicating).

A. Yes.

Q. You did not have uniformity there?

A. No.

Q. Referring to Plaintiff's Exhibit 51?

A. Yes.

Q. You have no uniformity, no two plaques are alike,

and with a suspension of 2,120,000,000 per millimeter you come out with counts immediately after inoculating
1156 them of 50,000 to 106,000, and on Plaintiff's Exhibit No. 46 you use a suspension much less strong, 600,000,000 bacteria per millimeter, and you come out with complete uniformity of 1,400,000 bacteria per plaque. Can you explain that?

A. Yes.

Q. Do so, if you will.

A. In the first place, counting bacteria by the plate method, when you get such heavily seeded plates you cannot count accurately. All you do fundamentally is estimate. This was an estimation.

The Master: Wait a minute. This is on Exhibit 46?

The Witness: Exhibit 46. We had 14,000 colonies on the plate.

The Master: That was an estimate?

The Witness: That necessarily was an estimate, examined by the use of microscope. The microscope has an area of one thousand and you just try to count the colonies in two or three or four of those fields. I was not interested so much in the exact counts. I was interested in the fact that there are plenty of bacteria on those plaques. So I estimate on the average the plates would have about 14,000 colonies. Why there are more here than here, I cannot tell you.

1157 The Master: More on 46 than on 51?

The Witness: Yes. This suspension appeared to be richer.

Mr. Schaefer: Q. It was richer, was it not?

A. According to the test, yes.

The Master: You are referring now to Exhibit 51?

The Witness: Yes.

Mr. Schaefer: Q. On Exhibit 51 the suspension was richer?

A. Yes.

Q. And the number you got on the plaque immediately after you inoculated them in that suspension was far smaller?

A. It was. I would liked to have seen it different. but these are the results. There were plenty. I didn't worry about the other points.

Q. You then reported the result of the count of those plaques on Plaintiff's Exhibit 46, after they had been ex-

posed to the air for thirty minutes; you again have complete uniformity.

A. Yes.

Q. Is that another estimate?

A. Well, when you get plates down—

Q. Is that another estimate, Doctor?

1158 A. No.

Q. That is the actual fact?

A. That is the actual count, yes.

Q. How do you account for the fact that on Plaintiff's Exhibit 46, after exposure to the air of the ten plaques for thirty minutes, you have complete uniformity, while on Plaintiff's Exhibit 51, after exposure to the air—

A. Wait.

Q. Yes.

A. There was not uniformity, pardon me.

Q. Where wasn't there uniformity?

A. On the individual plates.

The Master: Which one?

The Witness: After exposure for thirty minutes.

Mr. Schaefer: Q. On which one?

The Master: Referring to 46?

The Witness: Again I say those two lines, the first one and second one, are estimates.

The Master: On 46.

Mr. Schaefer: Q. You just said a moment ago it was an actual count.

A. Pardon me. I thought you referred to the lower counts.

Q. No, I meant those.

1159 A. Those two were estimates. I wish I could take you in the laboratory and give you the opportunity to count some of the plates. You would appreciate the point then.

Q. Those two are not actual counts, is that right?

A. No.

Q. They are simply—

A. Close estimates. That is what we do on all laboratory operations, under the standard method.

Q. On Plaintiff's Exhibit 51 you reported counts on those plaques, after they had been allowed to dry for thirty minutes, after being dipped in the suspension. Now, are those counts or estimates?

A. In the first line?

The Master: Thirty minutes.

Mr. Schaefer: No. After thirty minutes.
The Witness: This is the paraffining proposition.
Mr. Gariepy: It is an entirely different test.
Mr. Schaefer: We will see whether it is an entirely different test or not.
The Witness: Yes.
Mr. Schaefer: Q. Do you on this test report the condition of plaques of paper which have been inoculated after they have been allowed to dry for thirty minutes and before they are paraffined?
1160 A. This is actual count.
Q. Do you or do you not, Doctor?
The Master: Read the question to him.
(Mr. Schaefer's question was read by the reporter as above recorded.)
The Witness: A. These are actual counts of the colonies on individual plates.
Mr. Schaefer: Q. Will you answer the question?
Mr. Gariepy: Are they paraffined or unparaffined is what he is trying to get you to answer.
Mr. Schaefer: Read the question to him.
Mr. Gariepy: And listen to the question, Doctor.
(Mr. Schaefer's question was again read as above recorded.)
The Witness: Read the first part of that again.
(The first part of the question was read.)
The Master: The answer is yes or no.
The Witness: These are actual counts.
The Master: Well—
The Witness: I don't see what you mean.
The Master: Off the record.
(Discussion off the record.)
The Witness: A. Yes.
Mr. Gariepy: Show which test it is.
1161 The Witness: Test 4.
Mr. Schaefer: Q. Up to that time—
A. No. 4 on the one test.
Q. Up to that point on the tests reported in Plaintiff's Exhibit 51, the procedure is identical with that employed in the tests reported on Plaintiff's Exhibit 46?
A. Essentially they are identical, with this exception: that in this test—
The Master: No. 46.
The Witness: In 46, exhibit.

A. (Continuing.) —the first count and the second count were estimates, not complete counts of plates.

Mr. Gariepy: Thirty minutes and sixty minutes.

The Master: No.

The Witness: A. After sixty minutes, actual counts. In Exhibit 51 I actually counted the best I could the colonies, with the exception that No. 1, under Test 1, I did not count the whole plate, but counted part of the plate and then calculated. In a way, then, it is an estimate for each plate. The same way here—

The Master: No. 13.

The Witness: Test 3, No. 13.

A. (Continuing.) —again I did not count every colony on the plate. I counted part of the plate and then calculated how many there would be for the whole plate.

1162 The Master: No. 7, the same thing.

The Witness: No. 7 the same thing. This practice is by the standard methods permissible.

Mr. Schaefer: We are going to come to the standard methods too, Doctor.

The Master: Let us have a recess here for a few minutes.

(A short recess was here had, after which the proceedings were resumed as follows:)

1163 Mr. Schaefer: Q. When was the experiment reported in plaintiff's exhibit 46 performed?

A. May I see it?

Q. Surely.

A. This was performed at the University of Illinois in my laboratory, by myself, in August, about August 20 of 1939, this one.

Q. When did you take your vacation this year, Doctor?

A. I did this after vacation.

Q. When did you take your vacation?

A. I took my vacation, partly in July and the first part of August.

Q. You were occupied pretty well over the summer performing these tests, weren't you?

A. To some extent

Q. This was performed in August, you say, of 1939?

A. Yes, 1939. However, I would like to add that we performed many experiments during the last two and a half years, that is I did myself.

Q. The factor on plaintiff's exhibit 46 is 100?

Mr. Gariepy: Did you hear the question, Doctor?
The Witness: I didn't get it.
The Master: Read it.
(Question read by the Reporter.)
A. Yes, 100 dilution.
1164 Mr. Schaefer: Q. Now, you presented report of that experiment in the form of that exhibit in order to show what your results were with respect to this so-called self purification of paper?
A. I didn't get the question.
Mr. Schaefer: Read it.
(Question read by the Reporter.)
The Master: Answer.
A. Yes.
Mr. Schaefer: Q. You used there B prodigeosis as your bacteria?
A. Yes.
Q. You performed another test dealing with the same subject matter which you reported at the Dairy Manufactures Conference, at the University of Illinois, held in November, 1938, and in your report of that test you said this:
"Organisms like E-coli and B prodigeosis usually die in about 4 days."
A. All right.
Q. Staphylococcus aureus remain alive a few days longer, you said that, did you not?
A. That is correct.
Q. There is considerable difference, isn't there, between the results stated in the paper to which I
1165 just referred, and the results shown in plaintiff's exhibit 46, is there not?
A. Yes. I would say this, however, that we ran many tests on that, individual tests varied, and tests varied considerably with different germs.
Q. Yes, but here you used the same bacteria?
A. The same bacteria.
Q. And you presented this, which showed—
The Master: What is "this," now, exhibit what?
Mr. Schaefer: Plaintiff's exhibit 46, which showed maximum survival of five hours.
A. Yes.
Q. You did not present the results of the other experiments which showed survival after four days?
The Master: He did not present where?

Mr. Schaefer: Present here, in your direct examination.

The Witness: No. But we have the material.

Mr. Schaefer: Yes.

The Witness: I considered this, a germ of somewhat the same sensitivity, it is typhoid.

Q. What is?

A. This germ.

The Master: Q. What?

A. B prodigeosis. Typhoid germs probably have the same degree of sensitiveness towards external agents
1166 like heat and drying. Also—

Mr. Schaefer: There isn't any question pending.

The Master: No question pending, Doctor.

Mr. Schaefer: Q. Doctor, in the experiments reported in plaintiff's exhibits 47 and 47-A, in one set of those experiments you plated the agar directly into the container?

A. Yes.

Q. How much did you pour in?

A. About 25 to 30 m.l. of agar.

Q. How hot was it when it was poured in?

A. 45 degrees C., about 112 to 114 degrees F.

Q. How did you count the colonies after that?

A. After incubation I took a knife and cut off the container almost to the surface of the agar layer.

Q. Wait a minute. You cut off which end of the container, the bottom or the top?

A. Cut off the top, that left the bottom about one-quarter to one-third inch of the side and bottom, and the agar was on the bottom of the container.

Q. Now, did the edge of the container project above the agar at the bottom?

A. I cut it off with a sharp razor, so that almost to the surface of the agar—cut it off completely.

Q. Then what did you do?

1167 A. Then, with a knife—the first thing, I examined it, whether there were any colonies that I could see.

Q. Yes.

A. And, furthermore—

Q. How did you examine it to see whether there were any colonies that you could see?

A. With my eyes and the magnifying glass.

Q. That is before you cut it?

A. After I cut it off.

Q. After you cut it off?
A. Yes.
Q. Yes.
A. That would leave the bottom with about one-third or one-fourth inch height wall, and the paraffin is there.
Q. You don't mean paraffin, you mean agar?
A. Agar.
Q. Why did you proceed further?
A. I wanted to be sure to count all colonies.
Q. That is, you could not count them effectively?
A. The paraffin and container being of light color, I might lose some.
Q. Yes. What further did you do?
A. Then we have a glass, a ruled counting glass, ruled into square centimeters and then with a knife I
1168 inverted the container, what was left, and loosened the agar and dropped it on to the surface of the glass and then I counted it, examined it again for colonies.
Q. Some of the agar remained on the paper?
A. No.
Q. You got all of it off?
A. Yes.
Q. You scraped it?
A. No. It just peeled off.
Q. You say it peeled off?
A. Just loosened and dropped out.
Q. Now, when you got through with that, did you make any bacteriological examination of the paper?
A. No, not in those cases.
Q. Doctor, on plaintiff's exhibit 49, what is the factor?
A. These tests were made by applying the United States Public Health Standard Methods, rinsing.
Q. Doctor, is the factor 100?
A. It is 100.
Q. That's all right. Returning, again, to plaintiff's exhibit 51, the indications "D. N. P." in the left hand column are erroneous, are they not?
A. The letter "P" should be stricken out.
1169 The Master: In what test?
The Witness: In number one.
Mr. Schaefer: Q. In which test?
A. Number 1, number 7 and number 13, and then there is another table there—number one, number 4, number 7, number 10, number 13 and number 16.

Q. "P" should be stricken out?

A. The letter "P" should be stricken out.

The Master: Well, suppose you strike it out, then.

Mr. Gariepy: Just go ahead and do it now, Doctor.

(The witness corrects the exhibit.)

The Witness: Then number 19, number 22 and number 25.

Mr. Schaefer: Q. Now, Doctor, in test number one, reported in plaintiff's exhibit 51, you used a suspension of 2 billion 120 million per m.l.

A. Yes.

Q. In test number two, reported on plaintiff's exhibit 51, you used suspension of 59 million per m.l.

A. Yes.

Q. When you counted the colonies on each of the ten plates, in test number one, immediately after they were dipped in the suspension and removed therefrom, in test number one you got an amount varying from 508 to 1060?

1170 A. Yes.

Q. And in test number two, using a much lighter suspension, you got an amount as to count varying from 438 to 910?

A. Yes.

Q. How do you explain that?

A. I have no explanation. A variation in results, when you seed or inoculate paper like this so heavily.

The Master: Q. Was this done on the same day?

A. Yes.

Q. I thought maybe the wind would blow some of them away.

A. Either the same day or the next day. It was done within two weeks, this test.

Q. Either the same day or the next day?

A. Yes.

Mr. Schaefer: Q. The result of those two tests would indicate that the amount of bacteria on the paper plaques after they are immersed bears little or no relationship to the strengtth of the bacterial suspension?

A. That appears to be so, with this explanation, that these counts are estimates.

Q. Which counts, Doctor?

A. The counts in test number one.

1171 Mr. Gariepy: Test number one.

The Witness: Test number one.

Mr. Schaefer: Q. You testified a very few moments ago when I was asking you about plaintiff's exhibit 46 that these counts in plaintiff's exhibit 51, which you just referred to, were not estimates but were counts?

A. They were counts to this extent, I tried to explain it, if you remember, Mr. Schaefer, and you stopped me —that it is permissible when you have a large number of colonies on the plate, we count only a small section and then estimate or calculate out. We do not count all colonies in these cases, the colonies were not counted. To come back to your question here, I would expect naturally higher counts in test number one than we received, but I have no explanation. I am giving you just what we got.

Q. Have you any suggestion as to an explanation, Doctor?

A. Perhaps I was not careful enough to make enough dilutions, et cetera, because I was interested primarily to be sure that those plaques were very heavily inoculated.

Q. There is nothing on the exhibit to indicate that those are estimates, is there?

1172 The Master: That those are what?

Mr. Schaefer: There is nothing on the exhibit to indicate that those are estimates.

Mr. Gariepy: I object. The exhibit speaks for itself.

The Master: Overruled.

The Witness: They are counts, estimated counts, based on a limited area of counting.

Mr. Schaefer: Q. Now, what you did in the experiment reported in plaintiff's exhibit 51, in test number one report and number two, you took the saturated plaques as they came from the suspension and immersed them in paraffin at the temperature indicated in the exhibit, for the time indicated?

A. Yes.

Q. You don't know what the moisture content of the paper was at that time?

A. No.

Q. Will you describe the action that occurs when you immerse saturated paper such as that in hot paraffin?

A. To start to answer the question, I had to wait about a minute after I dipped the paper plaque in the bacterial suspension, for about ten seconds, then I took it out and drained it and put it like this (indicating) against

1173 something.

Q. You mean you stood it upright?
A. Pardon me.
Q. You stood it upright?
A. Stood it upright, yes, so as to not have too much surface water, too much of the suspension liquid on the surface.
Q. Yes.
A. Because it would interfere with paraffining, and when the plaque then becomes dull, the water freely drains off and partly is absorbed, then I paraffined it, to take about a minute.
Q. You did it as fast as you could?
A. I waited right there and watched it and the minute the shinniness, due to the surface water, disappeared, due to the surface of the paper, I then paraffined it.
Q. What occurs when you immerse paper with that content of water in paraffin, can you describe as a matter of physics what happens?
A. No, I don't know what happens. Of course, I have been watching it to see what goes on, but I don't know exactly what happens, except that the paper receives a coat of paraffin.
Q. As a matter of fact, the paraffin seals in the water, doesn't it?
1174 A. Probably, to some extent.
Q. So that you have the bacteriacidal effect of water under pressure at great heat, is that right?
A. If the heat penetrates through the paper, I would say there would be a little moisture there which would affect the killing of bacteria.
Q. That is the bacteriacidal effect of the immersion of paper in paraffin would not be the same? Let me put it this way—it varies with the moisture content of the paper?
A. I was unable to determine that. That point has been raised at the very beginning of the studies and I did not bring the data we accumulated where we paraffined containers wet, partly dry, and dry, but we could establish no relation between the wet container paraffined reasonably dry and thoroughly dry. I have a copious amount of data on that, using regular containers in the milk plant. I thought I had something to explain the occasional survival of bacteria or disappearance, but our data does not support any conclusion.

Q. How do you explain the occasional survival, Doctor?

A. I would have to theorize.

Q. Will you?

A. Because I don't know. Paraffin is liquid, but,
1175 at the same time, it is supposed to be dry, so that what we actually are doing in paraffining is, so far, as bacteria are concerned, attempting to kill bacteria with dry heat, which is not as efficient as wet heat, and that is a partial explanation. Another explanation as to the appearance of germs is, undoubtedly, some of them are covered, imbedded in paraffin and can not crawl out and you may not get them, but those are just conjectures, not proof.

Q. Of course, if you have wet paper, take the application of dry heat, will you?

A. Dry heat on wet paper?

Q. What you said, Doctor, was that the application of paraffin was an attempt to achieve a bacteriacidal result?

A. Yes.

Q. Was the application of dry heat, to obtain that result?

A. That is true.

Q. And that is less effective than with wet heat?

A. Yes.

Q. When your paper is wet you have wet heat, don't you?

A. Except that with our experiments as regards the paper, paraffining wet paper or dry paper, we could not establish any relation there.

1176 Q. Referring to plaintiff's exhibit 52, Doctor, what is the factor there?

A. The factor is one.

Q. I see.

A. No dilution.

Q. Could you now return for a moment to plaintiff's exhibit 51, you performed other experiments with respect to the bacteriacidal effect of paraffin which you reported in the paper read at the November, 1937 meeting of the Dairy Manufactures Conference, those results were not in accord with those reported in plaintiff's exhibit 51, were they?

A. Not quite.

Q. As a matter of fact, there are substantial differences, aren't there?

A I don't recall now what the results were reported in that paper.

Q. The results were—

Mr. Gariepy: I object to counsel asking the witness to compare it with something not in evidence. Let him put them in evidence and they will show on their face. Let him offer this report.

The Master: It may be a preliminary question and he may be intending to do it later on.

Mr. Gariepy: He says he can not answer it.

The Master: Read the question.

1177 (Question read by the Reporter.)

The Master: Objection overruled.

Mr. Schaefer: Q. As a matter of fact, the experiment which you reported to that conference showed that paraffin applied at 160 degrees F. for 60 seconds did not have a bacteriacidal effect; is that correct?

A. I will have to see the results. According to this, germicidal action began at 45 seconds.

The Master: Q. 45 seconds for what?

A. Of exposure of the strips of paper to the paraffin. In six tests, four were negative and two were positive.

Mr. Schaefer: Q. At what time and temperature?

A. 160 degrees F. for 45 seconds. At 160 degrees F. two were negative and four were positive.

Q. As a matter of fact, your report to that conference of your experiments showed that bacteria survived exposure to paraffin at 170 degrees F. for 30 seconds, is that correct?

A. Prodigeosis, 30 seconds; two were negative and four were positive.

Q. Now, will you answer the question I asked you?

A. If I may have it.

Mr. Schaefer: Read it.

(Question read by the Reporter.)

1178 A. In that test we got survival.

Q. Is that correct?

A. Well, it is correct. The report, the results of the test, are correct.

Q. All right.

A. I would like to explain. I would like the privilege to explain a little.

Q. In the test reported in plaintiff's exhibit 51, you used a bacterial suspension of 2 billion 120 million m.l. and in the test, result of which you reported to the con-

ference to which I referred, you used what kind of a suspension?

A. 200 million.

Q. Will you explain how, with the relatively light suspension used in the experiments which you reported to that conference, the bacteriacidal effect or property was significantly less than the test, the rinse test, 51, which you conducted last August?

A. There are different bacteriological methods and ways of doing it. We used a different method in that experiment.

The Master: Q. In "that experiment", you mean the one reported to the conference?

A. Yes.

Q. Than you did in the experiment recorded in what exhibit?

1179 A. Exhibit 51.

Q. Than in the experiment recorded in plaintiff's exhibit 51?

A. Yes, sir. I would like to elaborate on it a step further.

Mr. Schaefer: Go ahead, Doctor.

The Witness: In the table given at the Dairy Conference we used a strip of paper one-half inch wide and two and one-half inches long, a very small piece; we did it on a very small scale, by using a small amount of paraffin.

Q. You completely immersed the paper in paraffin?

A. Yes, we immersed it, we tried to, yes.

Q. Did you or didn't you immerse it in paraffin?

A. Yes, we did.

Q. Then you used sufficient paraffin to immerse the paper completely in it?

A. What I am trying to bring out is this, that in studies like this you get variable results, you can do the same thing every day and you won't get quite the same results; then if you introduce other factors in there, like a different strip of paper, and so on, you may get different results than when you introduce others.

Q. One thing at a time. I let you complete your

1180 explanation.

A. Yes.

Q. How would the fact that you used different strips of paper make any difference if it is all paper for the manufacture of containers, or wasn't it?

A. Yes, sir.

Q. The effect of paraffining at the same time and same temperature ought to be the same on any strip of paper, shouldn't it, or should it?

A. Well, I don't know. We used a different method, also. We took that strip of paper after we dipped it in the test before the Dairy Conference, dropped the whole piece of paper in the nutrient broth. In the plaintiff's exhibit 51 we somewhat followed the suggestion implied by Dr. Arnold in number six problem which he presented to the Court, by disintegration of the paper. We got these results. Now, the possible danger of contamination, if one germ would survive or would be dropped in handling—

Q. Doctor, I haven't asked you that yet. You just wait.

A. I could—

Q. You just wait.

A. What?

Q. I asked you to explain the difference. You
1181 don't need to go beyond that. You have now stopped explaining the difference, I take it.

A. Pardon me.

Q. Why should you get a different result with a disintegration test than you get from using nutrient broth?

A. I could not tell you, with this explanation, that if one cell, one bacteria cell survived on the strip of paper as we did it in the test which was given before the Dairy Conference, and you dropped the strip of paper in broth you will get growth. When you disintegrate it you may not catch it by plating.

Q. Because you don't plate the entire thing?

A. Because you don't plate the entire thing, that is one explanation.

Q. Then you would say that the test that you reported to the 1937 conference was more accurate in showing the survival of bacteria?

A. I don't know. It would seem so.

Q. It would seem to be more accurate, in your opinion?

A. Because you may skip one bacteria in making the plates.

Q. The test reported to the conference in 1937
1182 would seem to be more accurate than the result presented in plaintiff's exhibit 51, is that right?

A. I would say that it would be the tendency.

Q. Now, in view of the fact that tests of or by an ac-

curate method indicate that B prodigeosis will survive immersion in paraffin at 170 degrees F. for 30 seconds, is it still your opinion that paper containers, from a public health point of view, should be paraffined at 170 degrees F. for 20 seconds?

A. Yes.

Q. Doctor, on what date in July did you visit the plant of the Ogden Dairies?

A. That I don't know.

Q. Early or late?

A. About the middle of July would be my guess.

Q. Were you at that dairy on one occasion or more than one occasion?

A. On one occasion.

Q. Who went with you then?

A. Pardon me.

Q. Who went with you then?

A. Professor Tracy came with me.

Q. Who else?

A. Dr. Brannon also was with me, my co-worker, my colleague.

1183 Q. Where is he?

A. He is in my Division.

Q. At the University of Illinois?

A. Yes.

Q. What did you do when you went there?

A. We went in and asked permission to examine glass bottles.

Q. Of whom did you ask permission?

A. I couldn't give you his name. He is the superintendent of the plant.

Q. He was the superintendent of the plant?

A. I think so.

Q. You can not recall his name?

A. I don't recall his name. I know the foreman's name.

Q. Who else did you talk to there?

A. Who else?

Q. First, what was the substance of your conversation with the superintendent of the dairy?

A. We asked permission to examine the glass bottles.

Q. For what purpose?

A. We have been carrying on—

Q. What did you say to him, and what did he say to you, Doctor?

A. I don't recall. We went in—

1184 Q. As nearly as you can recall, Doctor. This is fairly serious, this means a lot.

Mr. Gariepy: I object to counsel's remarks and ask that they be stricken and the Master caution him against repeating that "it means a lot". That is clearly improper.

The Master: Every question he asks means a lot. Go ahead.

Mr. Schaefer: Q. Give the conversation?

A. I can't give you—

Q. Give the substance?

A. The substance is, we came in—we drove in and brought our equipment with us and asked him to permit us to take bottles and examine them, that we are making a survey of glass bottles, sterility of glass bottles.

Q. For what purpose?

A. That project we have been having on for the last few years..

Q. In connection with that project, did you ever make tests on milk bottles at any other Chicago plant?

A. Yes.

Q. At what plant?

A. Well, I withdrew the other determination, be-

1185 cause—

Mr. Gariepy: Q. The other exhibit, you mean—not determination?

A. A part of the exhibit, yes—the determinations from another plant.

Mr. Schaefer: Q. Did you ever make any tests at Chicago dairies prior to July of 1939 in connection with that project?

Mr. Gariepy: I object to that. I asked him nothing about Chicago dairies, unless you are talking about Chicago dairies in general.

The Master: Overruled.

Mr. Schaefer: Read the question.

(Question read by the Reporter.)

A. We made tests, but not in connection with that project.

Q. This project has been going on for two years, hasn't it?

A. Longer.

Q. It has been going on longer than two years?

A. Yes.

Q. What equipment did you bring with you?
A. Plates, that is petrie dishes, dilution water.
Q. What?
A. Sterile dilution water.
1186 Q. Yes.
A. Pipettes, sterile pipettes and sterile caps, paper caps.
Q. What did the superintendent say to you after you had stated you were making a survey?
A. He said "Go ahead".
Q. And then what did you do?
A. They gave us a table to work on in their small laboratory and we took the bottles as they were traveling from the bottle washer to a bottle filler, put a sterile cap on it and brought it from their milk plant to the laboratory and examined them.
Q. You examined fifty bottles?
A. Yes.
Q. How did you examine them?
A. By using the standard method, rinsing the bottles.
Q. Standard method is enough, I understand.
A. Yes.
Mr. Gariepy: Q. Rinse tests?
A. Rinse test.
Mr. Schaefer: Q. What time of day was that?
A. During the morning.
Q. To whom did you talk in the plant, in addition to the superintendent?
A. To the foreman.
Q. What was his name?
1187 A. I know him—it will come back to me, his name.
Q. Did you talk to any one in addition to the foreman and the superintendent?
A. No.
The Master: Q. Did you just walk in there off of the street, or did you have any previous communication with them?
A. No previous communication.
Q. Who suggested this particular dairy, of all of the dairies in Chicago?
A. Sort of taking sound.
Q. What?
A. Nothing, except the foreman in the dairy is a former student.

Q. A former student?

A. A former student of ours.

Q. Is that the reason you happened to pick this particular dairy?

A. That was one reason. They knew us well.

Q. Were there any other reasons for picking out this dairy?

A. No particular other reason, except it is a fairly good sized dairy and I think they have good equipment in the dairy.

Q. What was the reason for doing it just at that time?

1188 A. Two-fold. We are going all over the State whenever we can to different milk plants to make a bacteriological survey to find the condition, bacteriological condition of glass bottles. Then, the Board of Health in Chicago feels—and rightly so—that they have a very good control so far as inspection is concerned over the milk plants. So, we thought it would be nice to have some bottles from a region, which region is under very high standard inspection.

Q. Did you report the result of your inspection to the Board of Health of Chicago?

A. No.

Mr. Schaefer: Q. Did you report them to the dairy?

A. We promised, and Dr. Brannon—

Q. Doctor, did you report them to the dairy?

A. No.

Mr. Gariepy: Answer the question, Doctor.

A. I don't think so.

Mr. Gariepy: Just answer it, that's all.

A. I am not quite sure, but I don't think so.

Mr. Schaefer: Q. So far as you know, they were not reported to the dairy?

A. No.

Q. That is, so far as you know?

1189 A. No.

Mr. Schaefer: The dairy will hear about that when they read the newspapers.

Mr. Gariepy: I object to that, whether they will or not.

The Master: Go ahead. There is no question pending. The remark may be stricken.

Mr. Gariepy: That is stricken.

The Master: Yes.

Mr. Schaefer: I can not finish the cross-examination today, Master.

(Discussion off the record.)

The Master: We will continue at 9:30 tomorrow morning, unless you wish to start at 9:00 o'clock.

Mr. Schaefer: I would like to look over the direct examination before I conclude.

The Master: 9:30 tomorrow morning.

(Whereupon the further hearing in the above entitled cause was continued to Wednesday, September 20, 1939, at 9:30 o'clock, a. m.)

1190 • • (Caption) • •

Wednesday, September 20, 1939,
9:30 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy,
Mr. Rall.
Mr. Schaefer,
Mr. Horan.

1191 The Master: Are you ready to proceed?
Mr. Schaefer: Yes.

M. J. PRUCHA, a witness called on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Schaefer (Continued).

Q. Doctor, in the paper read by you at the convention of the International Association of Milk Sanitarians, in October of 1937, you made this statement:

"Milk sanitarians should inspect paper mills and check on the pulp. In the first place, the water used for diluting the pulp usually comes from polluted streams or lakes. Some paper mills have proper sanitary control over the water supply, while other mills have not."

Is that condition still true with respect to the control of the water supply of paper mills?

A. Paper mills in general?
Q. Yes.
A. I think so.
Q. Do you believe at the present time that sanitary control of the water supply in a paper mill is of no public health significance?
1192 A. It is of public health significance if it is not controlled.
Q. And by control you mean what?
A. By control I mean the chlorination by the technical department of the paper mill.
Q. What about the statement that you made yesterday, about using water from the Sanitary District Canal?
Mr. Gariepy: I object to that question. There isn't any question to that, as a matter of fact. I suggest the counsel put a proper question to the witness.
The Master: Yes.
Mr. Gariepy: It is argumentative.
The Master: It is not argumentative, but it is indefinite.
Mr. Gariepy: Very indefinite.
The Master: Make your statement or question a little more direct, Mr. Schaefer.
Mr. Schaefer: Q. Do you still adhere to the opinion you expressed yesterday that it would be proper public health practice to permit the manufacture of paper containers for the distribution of milk, using water from the Sanitary District Canal?
Mr. Gariepy: I object. He did not say that yesterday, that they had used that water or anything like it.
The Master: Let him explain what he did say. Go ahead.
1193 The Witness: A. They should not use such water.
Mr. Schaefer: Q. Would it be of any public health significance if they did?
A. It might.
Q. I would like to have you refer to Plaintiff's Exhibits 47 and 47-A. The containers which were examined by you in the tests reported in those exhibits were selected and shipped to you by the Fieldcrest Dairies, were they not?
Mr. Gariepy: Wait a minute. Here is 47, Doctor.
The Witness: Yes.
Mr. Gariepy: And here is 47-A. No. 47 is on top.
(Handing documents to the witness.)
The Witness: A. Yes, Mr. Schaefer.

Mr. Schaefer: Q. Now, referring to Plaintiff's Exhibit 56, from what source were the unparaffined containers used in that experiment obtained?

Mr. Gariepy: I am showing you Exhibit 56 that Mr. Schaefer is referring to. (Handing document to the witness.) From what source did those containers come?

The Master: Off the record, please.

(Discussion off the record.)

The Witness: A. These containers came from our supply at the university.

Mr. Schaefer: Q. And where did you secure your supply?

1194 A. From the Pure-Pak, from the Ex-Cell-O Corporation.

Q. Where was the paper made?

A. I do not recall. I presume it was made in the Cherry River Paper Mill.

Q. But you do not know?

A. I am not certain.

Q. In the experiment reported in Plaintiff's Exhibit No. 56 you found that one of the samples tested was free from bacteria; you found that the remaining five samples tested varied in bacterial content from eighteen colonies per gram to thirty-three colonies per gram?

A. Correct.

Q. How do you explain that result, in the light of your self-purification experiment, which is reported in Plaintiff's Exhibit 46?

A. Paper is not always free from bacteria.

Q. But I thought Plaintiff's Exhibit 46 indicated that paper would, by a process which you described as self-purification, rid itself of all bacteria?

A. I did not make that statement, if I may say so.

Q. What is the significance of Plaintiff's Exhibit 46?

A. Exhibit 46 is non-spore-forming bacteria being deposited on the paper and exposed to drying. In Exhibit 56 the bacteria are miscellaneous, including spore-forming organisms.

Q. As well as non-spore-forming?

1195 A. Yes. Most of them were spore-forming.

The Master: Q. What is the difference?

A. The difference is that you cannot destroy spore-forming bacteria by any bactericidal treatment.

Q. That is the spore-forming?

A. Spores, yes.

Q. That is the more harmless of the two?

A. Harmless, yes. This organism in Exhibit 46 was the B-Prodigiosis, I believe, and it is an organism that does not form spores.

Q. That is the more dangerous form of bacteria?

A. It is an organism in the group of which the disease bacteria are classed.

Q. It is the non-spore-forming in association with drying that had a greater bactericidal effect than in the case of the spore-forming?

A. Drying will not kill spores.

Mr. Schaefer: Q. Referring again to Plaintiff's Exhibit 46, from the results there drying did kill spores. After nine hours you found no bacteria of any kind?

A. I didn't say that.

Q. You mean you found no B-Prodigiosis?

A. I counted only B-Prodigiosis colonies.

1196 Q. Then there may or may not have been bacteria present there?

A. There were occasional colonies on the plates, yes, of other bacteria.

Q. Then that exhibit does not show the entire bacteriological condition of the paper?

A. No.

Q. It shows simply—

Mr. Gariepy: Let the witness answer, I suggest. Counsel makes a statement. Let the witness answer instead of counsel making statements.

The Master: Off the record, please.

(Discussion off the record.)

The Master: Go ahead.

Mr. Schaefer: Q. It shows simply the inoculating organism which is present after the periods of time indicated in the exhibit, is that correct?

A. Correct.

Q. There were other types of non-spore-forming bacteria present in the paper after the expiration of the periods of time described in that exhibit, were there not?

A. True.

Q. Then the result of the experiment does not indicate that all non-spore-forming bacteria are killed by the

1197 mere exposure of paper to the air, is that correct?

A. This Exhibit 46 does not show that, but they do.

The Master: Q. They do what?

A. Non-spore-forming bacteria, when they are left on the paper, will die in time. The length of time varies with the different germs.

Q. But the spore-forming are the more hardy of the two?

A. The spore-forming will stay several years, maybe.

Mr. Schaefer: Q. How do you account for the presence of non-spore-forming bacteria in that paper when you disintegrate, after the times indicated in the exhibit?

A. That has not been solved. Experiments have been followed or performed with the idea of trying to locate them. The disintegration of paper and the examination of bacteria when there are so few bacteria is very difficult. The bacteriological method sort of fails quantitatively. You cannot tell by fifteen or twenty germs. It is affected by the limits of the accuracy of the method. There are no certain spores predominating in the paper in numbers. We find occasionally in the paper, especially, in the container after it is paraffined, two organisms, a variety of micrococcus.

1198 Q. Is that non-spore-forming?

A. That is non-spore-forming, yes, and a yellow organism called sarcina.

Q. Is that also non-spore-forming?

A. That is a non-spore-forming organism, yes.

Q. Then all spore-forming organisms do not die from the mere exposure to the air?

A. If the paper is exposed long enough, yes.

Q. Now, you found some spore-forming bacteria here on Plaintiff's Exhibit 46 after the lengths of time indicated there, didn't you?

A. I don't know. One explanation—

Q. The answer to that question is "yes," is it not?

Mr. Schaefer: Read the question, Mr. Reporter, please.

The Witness: Yes, read the question.

(Mr. Schaefer's question was read by the reporter as above recorded.)

The Witness: Non-spore-forming. May I correct that?

Mr. Schaefer: Q. You are right. Non-spore-forming is what I mean.

A. You find some occasionally on the plates.

Q. You found them here?

A. I don't recall.

Q. On Plaintiff's Exhibit No. 46?

A. I don't recall what organisms there were. There were so few, I paid no attention to the occasional colonies on the plates.

Q. But they were there?

A. I could not answer as to this particular exhibit.

The Master: Q. Now, you say that there might have been some non-spore-forming or spore-forming organisms?

A. There were a few spore-forming organisms. The plates were not absolutely free from bacterial. There would be something like one colony on a plate, and the next plate would have none.

Q. Of the spore-forming?

A. I thought from the looks they were spore-forming organisms.

Q. Would you say there were any non-spore-forming organisms there?

A. I could not tell, as to this exhibit.

Mr. Schaefer: Q. But as a general rule you have found non-spore-forming bacteria?

A. Occasionally.

Q. And that was long after the paper was manufactured, was it not?

A. Yes.

Q. And they were not killed by the natural drying process, were they?

A. They were present.

Q. In your opinion, does the fact that the paper used in the performance of Plaintiff's Exhibit 46 was saturated with water have any effect upon the result of that experiment?

A. I could not answer that question, in a way.

Q. You don't have any opinion at all on that question?

A. Will you repeat it, please?

(Mr. Schaefer's question was read by the reporter as above recorded.)

The Witness: A. I did not think so.

The Master: Q. Would it have the effect of prolonging the life of the bacteria?

A. It would, if the paper is kept somewhat damp.

Q. We are talking now if the paper is saturated.

A. If the paper is saturated and it dries within a minute, there is no appreciable beneficial effect of the water on the bacteria there.

Q. Did you apply any artificial drying to this paper?
A. No.
Q. It just dried by room temperature?
A. By room temperature. Just put it up like this (demonstrating).
Q. You stood the paper up?
A. Yes.
Q. And let the water flow off?
A. Whatever there was, and gradually it dried.

Mr. Schaefer: Q. Does not the fact that the paper
1201 dried in one minute indicate that it was pretty thirsty paper?

Mr. Gariepy: Do you understand that, Doctor?
The Witness: I understand it, yes.
A. Why, the paper was dry. I did not test the amount of moisture. The weather would affect the speed of drying. If the paper is kept in a damp place, it will pick up a little moisture. If it is kept in a dry place, the moisture would go out.
Mr. Schaefer: Q. The fact that the paper, this particular paper, dried in one minute, however, indicated that it was pretty thirsty paper, didn't it?
A. Pardon me. I didn't say it dried in one minute.
Q. Oh, I understood you to say that to the Master a minute ago.
A. No.
The Master: Q. What do you mean by that, that it dried in one minute, if you remember what it was?
A. I said this; that within one minute, as the moisture evaporates, it does not have any beneficial effect on bacteria.
Q. Beneficial? Do you mean bactericidal?
A. No, I mean bacteria would grow in it, or something like that.
Q. I see.

A. But I don't think the paper would dry com-
1202 pletely in one minute. It would entirely depend on environment.

Mr. Schaefer: Q. As a matter of fact, would not the rapid absorption of the moisture by the paper have a tendency to dry out, to desiccate the bacteria, and thus kill them?
A. If the moisture is absorbed—will you please read the question?

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: You see, the question is not correct.

Mr. Schaefer: Q. Would it have that tendency?

The Master: What is your answer?

The Witness: A. I don't know what to answer, because the question is not correct, because you imply that paper absorbs the moisture. Read it again.

(Mr. Schaefer's last question was again read as above recorded.)

The Witness: A. Absorption? You see, I don't know how to answer that question.

Mr. Schaefer: Q. You mean, you don't know whether the paper absorbs the moisture or not?

A. You mean from the air, moisture from the air?

Q. No, I mean the moisture with which you
1203 saturated the paper.

A. Now, in view of your explanation—please read that question again.

(The question referred to was read as follows: "As a matter of fact, would not the rapid absorption of the moisture by the paper have a tendency to dry out, to desiccate the bacteria, and thus kill them?")

The Witness: A. No.

Mr. Schaefer: Q. Why not, Doctor?

A. It would be just the reverse, if anything.

Q. Will you explain that?

A. If the moisture is absorbed by the paper rapidly, that has nothing to do with any desiccation of the bacteria in the paper.

Q. You were testing for surface bacteria, however, weren't you?

A. Both.

Q. I thought you told us a moment ago, Doctor, that you only reported the surface bacteria with which you inoculated the paper, that that exhibit shows no other bacteria.

A. The method of inoculation of this paper was by dipping it in liquid.

Q. Yes.

A. And that immediately this paper tends to ab-
1204 sorb some water inside it.

Q. Yes.

A. That is right.

Q. Now, did you measure the degree of absorption?
A. I weighed a number of samples.
Q. When did you weigh them?
A. As soon as I took them out.
Q. Did you weigh them first?
A. Of course, I weighed them first, and then I weighed them again as soon as the water dripped off, in a matter of, say, ten seconds.
Q. And what did the results show?
A. It varies somewhat.
Q. In general?
A. From one-twentieth to as much as one-tenth of a millimeter of moisture absorbed by a piece of paper two inches by four and a half, size 17.
Q. Seventeen point paper?
A. Yes.
Q. Did you weigh the strips of paper before and after?
A. Yes.
Q. Now, in terms of weight, how much absorption was there? You can state it in percentages, if you wish.
A. Yes, in terms of weight, I should say from one-tenth to one-twentieth of a gram. It varied, for 1205 some reason.
Q. You mean, there was an increase from one-tenth to one-twentieth of a gram?
A. Yes, something of an increase.
Q. Now, how much did your plaques, two inches by four and a half inches, weigh before you immersed them in the solution?
A. About two grams.
Q. Two grams?
A. Yes, about two grams.
Q. Are you able to account for the fact that all non-spore-forming bacteria are not killed by this so-called self-purification process?
A. I didn't say they are not killed by the purification process.
Q. But you find them after the paper has been exposed to the air, is that correct?
A. Occasionally you find a colony on the plate, yes.
Q. Indicating, of course, that they have not been killed?
A. Not necessarily.
Q. Indicating what?
A. One bacteriologist feels that there contamination, in

disintegration of the paper, in making the plates, that once in a while these germs will slip in from the operator's hands or from a cold or from the air. That is one
1206 bacteriologist's explanation.

Q. That would be poor technique, wouldn't it?

A. No, not necessarily.

Q. What other explanations are there?

A. In the handling of the paper in the course of disintegration, we have to expose the paper to the air; we have to cut it, and we have to handle it.

Q. That is the explanation you just gave, is it not, Doctor?

A. No, that is a slight variation of it.

Q. What other explanations are there?

A. I don't know.

Q. The only explanation that you know of is that bacteria—

Mr. Gariepy: I object. The witness has told the explanations and he said he didn't have any more.

The Master: Overruled.

Mr. Schaefer: Q. The only explanation that you know of, Doctor, is that those bacteria enter the paper during the process of disintegration, isn't that correct?

A. That is one possible explanation.

Q. That is the only one of which you are aware?

Mr. Gariepy: I object, for the same reason. The witness has already told him in detail.

1207 The Master: I will let him answer. Go ahead.

The Witness: A. There might be some other ways of the germ getting on, that particular bacteria.

Mr. Schaefer: Q. I wish you would refer to Exhibit 54, Plaintiff's Exhibit 54, Doctor. That exhibit reports the results of certain rinse tests conducted by you to ascertain the bacteriological condition of paper milk containers before they were paraffined.

A. Yes.

Q. And that exhibits shows that of 128 containers which you examined, 24 had a bacterial content, as disclosed by the rinse tests, which ranged from 350 colonies per container to 1800 colonies per container, doesn't it?

A. You are calculating it out?

Q. Yes.

The Master: You have looked at them, Mr. Schaefer?

Mr. Schaefer: Yes.

The Master: You are willing to take his word that the exhibit shows that, Doctor?

The Witness: Yes.

Mr. Schaefer: Q. That column shows it there.

A. I see it, yes.

Q. Check those and see if it is correct.

1208 A. I see it, yes.

Q. Check the first two and see if the range is correct, the first and the last.

A. Nine and eight are seventeen, divided by two. That is correct.

Q. The factor which you apply to that table is 100?

A. 100, yes.

Q. How do you reconcile the counts shown there in rinse tests made of paraffined containers with the results of your self-purification experiments reported in Plaintiff's Exhibit 46?

A. In the first place, 25 shows no bacteria at all.

Q. Doctor, will you answer the question, please?

A. Yes, I am trying to.

The Master: By 25 you mean No. 25, don't you?

The Witness: In order. How do I account for the presence of the bacteria?

Mr. Schaefer: Q. That is right. How do you reconcile the results in Plaintiff's Exhibit 54 with those shown in Plaintiff's Exhibit 46?

A. The containers were put in the machine, sealed, exposed to the machine, and then were taken out just before they were to drop into the paraffining well.

The Master: What experiment are you talking about?

1209 The Witness: This (indicating).

The Master: That is No. 54?

The Witness: Exhibit No. 54.

Mr. Schaefer: Q. Now, the containers in Exhibit No. —that is right. I withdraw that.

A. No. 54. They were passed through the machine, the bottom formed and sealed, and then taken out just as they were ready to dip in the paraffining well, so that they were exposed to the air, to the machine, to the parts of the machine, and they were sealed with adhesive.

Q. You mean this pick-up, this increase in amount of bacteria, is due to the machine, is that correct?

A. It is due to the general—not only to the machine, but the general contamination of handling the containers.

Q. To the machine and to the conduct of dairy operations at that time and place?

A. We must remember—

Q. Isn't that correct?

A. Yes.

Q. All right.

A. Not wholly.

Q. All right. Make it correct.

A. I don't know where they came from, but I am guessing that part of the contamination came from those sources. There were some bacteria on the paper containers before they were put in the machine, also.

1210 Q. How do you account for that, in the light of your self-purification results?

A. I have to always come back to this point, that paper always, as a rule, has bacteria in it, the predominating type being the spores, so that the paper is sterile from the definition of commercial operations. It is not sterile from a bacteriological standpoint, always.

The Master: Q. Does your Exhibit 46 about self-purification include the spore-forming organisms?

A. No. 46 deals only with non-spore-forming organisms.

Q. And how about Exhibit No. 54?

A. It includes the whole population of bacteria, different kinds.

Q. Both spore-forming and non-spore-forming?

A. We did not examine in this study which were non-spore formers and which were spore formers, aside from examining the plates visually.

Mr. Schaefer: Q. And by that visual examination you say there were non-spore-forming bacteria present?

A. My recollection is that the predominating bacteria in the paper are spore-forming bacteria.

Q. Yes. Now, will you answer that question, Doctor?

The Master: Read the question.

1211 (Mr. Schaefer's question was read by the reporter as above recorded.)

The Master: In what exhibit are you talking about?

The Witness: No. 54.

Mr. Schaefer: Exhibit 54.

The Witness: A. I do not recall.

Mr. Schaefer: Q. If there were not, it would have been unusual, is that correct?

A. There probably were some.

Q. Now, will you refer to Plaintiff's Exhibit 49, please?

A. Yes.

Q. By what factor should the results indicated in the two experiments depicted on that exhibit be multiplied to show the number of colonies per container?

A. As far as I know, by 100.

Q. Will you explain that, Doctor?

A. We pour 100 millimeters of sterile water in the container, shake it, and make two plates, one millimeter in each plate, and pour nutrin-agar in them and incubate the plates, and then count the colonies that develop on the plates. Now, suppose you have one colony on each plate. That means that each cubic centimeter had one colony, and we put in a hundred cc.

1212 Q. Now, in your first experiment reported in Plaintiff's Exhibit 49 you made rinse tests of 132 paraffined Pure-Pak containers, didn't you?

A. One hundred and thirty-two, yes.

Q. And you found bacterial contents ranging from 0 to 1150 per container, is that correct?

A. Yes.

Q. And in the second experiment reported on Plaintiff's Exhibit 49 you made rinse tests of 395 paraffined Pure-Pak containers?

A. Yes.

Q. And you found bacterial counts ranging from 0 to 2050 colonies per container, is that correct?

A. Zero to—that is correct.

The Master: Q. How do you get the 2050?

A. Here (indicating). Twenty colonies by twenty-one. Add it and divide by two. The factor is 100.

Mr. Schaefer: Q. How do you reconcile those counts on the paraffined containers with the results of the self-purification experiment on Plaintiff's Exhibit 46?

A. These were paraffined containers in Table 9.

Q. Yes.

The Master: Q. They were also paraffined containers in Table 8, were they not?

1213 A. Yes. How do I account for the presence of bacteria?

Mr. Schaefer: Q. Yes, in view of the experiment reported in Plaintiff's Exhibit 46.

The Master: Q. In other words, would the self-purification apply both to paraffined and unparaffined containers?

A. These containers were paraffined and examined within a half hour.

Mr. Schaefer: Q. Yes.

A. And this was the bacteriological condition of the containers, corresponding to the bacteriological condition of glass bottles ready to be filled with milk.

The Master: Q. Where did the bacteria come from?

A. They came from this fact, that bacteria are distributed in nature everywhere, and no matter what you do—you put a dish here and it won't be long before some of them drop in. You can't do anything about it. In other words, there is a continual contamination of everything.

Q. The bacteria in this Exhibit 49 were on the paraffin, weren't they?

A. They were inside.

Q. Inside the container after it was paraffined?

A. Yes. The container is paraffined, traveling 1214 through the—

Mr. Schaefer: Q. I think we understand the operation, Doctor, but were did the bacteria come from?

A. I feel that is the explanation. They drop in here and there.

The Master: Q. Why don't they drop here, on Exhibit 46?

A. This was an entirely different matter here. Some of them may have dropped on the piece of paper, yes.

Q. How do you distinguish between the two exhibits? That is what we are getting at. On Exhibit 46 you show what you call a self-purification of paper.

A. Yes.

Q. And the absence of bacteria at various periods.

A. Due to drying.

Q. Due to drying?

A. Yes.

Q. Now, what Mr. Schaefer wants to know is, if the drying would not have the same effect on the presence of bacteria, whether the container was paraffined or unparaffined?

A. I feel the drying played no part in Exhibit 49.

Q. That is, Exhibit 46 deliberately tried to find the effect of drying, and for that reason you had various intervals from thirty minutes to twenty-four hours?

A. Before I examined—

1215 Q. Before you examined them?

A. Yes.

Q. While in the case of Exhibit 49, you made the examination—

A. Within a reasonable time.

Q. Well, within a half hour, would you say?

A. Something like that, yes.

Q. After the container had been paraffined?

A. Yes.

Mr. Schaefer: Q. Now, refer again to Plaintiff's Exhibit 54. I am sorry to bring you back to that, Doctor. That exhibit reports the results of experiments conducted to show the bacterial condition of paper milk containers before they are paraffined, doesn't it?

A. Correct.

Q. Now, in your address at the Dairy Manufacturers Conference, at the University of Illinois, in November of 1938,—

Mr. Gariepy: 1937, is it not?

Mr. Schaefer: There are two of them, 1938.

Mr. Gariepy: Excuse me.

Mr. Schaefer: Q. (Continuing.) —you also reported the results of experiments conducted to show the number of bacteria contained in the paper container board, did you not?

1216 A. Correct. Well, I have to see it first.

Q. Here. (Handing document to the witness.)

A. Yes.

Mr. Schaefer: Mr. Reporter, mark this Defendant's Exhibit 7, please, for identification.

(The document referred to, being a copy of address of Dr. Prucha to Dairy Manufacturers Conference at the University of Illinois, November, 1938, was thereupon marked Defendant's Exhibit 7 for identification.)

Mr. Schaefer: Q. Will you compare that with the table shown in the report of the proceedings of the conference and tell me whether or not it is correct?

A. Apparently it is correct.

Q. Will you look at it more closely and see whether or not it is correct?

A. I am satisfied.

Q. Now, in the experiment reported in Defendant's Exhibit 7, how many samples of paper did you examine?

A. Seventy.

Q. And of the seventy samples you examined, how many showed no bacterial content?

A. Four.

Q. And how many of the samples showed a content in excess of 500 per gram of paper?

A. Twenty-three.

1217 Q. And how many of the seventy showed a bacterial content in excess of 100 per gram?

A. Forty-two.

Q. Are you aware that the standards recently fixed by the United States Public Health Service require paper of a bacterial content of less than 100 per gram?

A. Yes.

Q. The results of the experiment reported in Defendant's Exhibit 7, with respect to the number of bacteria in the paper used in manufacturing the Pure-Pak containers, are distinctly higher than the results of the experiment pertaining to the same matter reported in Plaintiff's Exhibit 54, are they not?

A. They are, if you take the first two columns.

Q. They are on any basis, are they not, Doctor?

A. No, sir.

Q. All right. On what basis are they not?

A. The Pure-Pak containers are made from Cherry River paper and the Cherry River samples are about the last ten or fifteen, I think, in this third column.

The Master: Of Defendant's Exhibit 7?

The Witness: Yes.

Mr. Schaefer: Q. From what sources did you obtain the paper used in the experiments reported in De-

1218 fendant's Exhibit 7?

A. They came from all sorts of sources and I could not give you exact information, unless I go back into my notes.

Q. All the paper used in that experiment was paper manufactured for use in paper milk containers, was it not?

A. It was submitted as a potential source. It is an experiment. If it was too high, they would not use it. In other words, this was an experiment, a part of an experiment. The paper mill tried to make paper with a low bacterial count, and if it was higher, then what shall we do? Try to correct it.

Q. This experiment showed, didn't it, the bacteriologi-

cal condition of the paper board designed for use in paper milk containers, submitted to you from five different paper mills, is that true?

A. Essentially it is correct. I am not quite sure. A few samples may have been some other paper, even. I was interested in the bacteriology of paper generally. This was done almost two years ago.

Q. Let us see whether or not that is a fact, Doctor. You reported that to the Dairy Manufacturers Conference in a paper, the title of which is "Are Paper Milk
1219 Containers Sanitary?"?

A. Yes.

Q. For what purpose were you examining the bacterial content of paper other than in paper milk containers and reporting the results of that test in such a paper?

A. I would say that practically all of the samples came from paper which was made with the idea that it was to be used for milk.

Q. Didn't you check to ascertain whether or not it was designed to be used for paper milk containers?

A. Yes. I have it in the notes. I could not say one hundred per cent. I will admit it was made for the purpose of making paper for milk containers, submitted to us to determine whether it was good.

Q. Where did it come from?

A. I couldn't tell you where the individual samples came from.

Q. Where did all of the samples come from?

A. They came from six paper mills.

Q. Now, will you name them?

A. Detroit Paper Mill, Cherry River—

Q. Just a minute. The Detroit Paper Mill was manufacturing paper board for use in paper milk containers, was it not?

1220 A. They did.

Q. All right, go ahead.

The Master: The next one you gave was Cherry River.

The Witness: Cherry River.

Mr. Schaefer: Q. And they also were manufacturing paper for use in paper milk containers?

A. Yes.

Q. Go ahead.

A. Regal.

Q. And they also were manufacturing paper for use in paper milk containers?

A. Two plants.
Q. Is that right?
A. Yes. Champion.
Q. And Champion also was manufacturing paper for use in paper milk containers?
A. In general. Not for Pure-Pak.
Q. For use in paper milk containers?
A. Correct.
Q. All right. Who else?
A. Two more. I believe a mill by the name of Lewis Mill.
Q. And they also were manufacturing paper board for use in paper milk containers?
A. Yes.
The Master: What was that name again?
The Witness: Lewis.
Mr. Schaefer: Q. Do you remember the full name?
A. The samples came from Lewis, Champion, Regal.
1221 Q. Then all of those samples were samples of milk container board, weren't they?
A. I think so.
Q. You were not testing shoe box board, to report on the bacteriological content of paper milk containers, were you?
Mr. Gariepy: I object to that.
The Master: Overruled.
Mr. Gariepy: There is a limit to this, Master.
The Master: He is going along all right. Objection overruled. Go ahead.
The Witness: A. Mr. Schaefer, I would have to look in my notes to be absolutely certain. I said I admit that they were.
Mr. Schaefer: Q. Do you report the bacterial content of shoe box containers to milk sanitarians?
Mr. Gariepy: I object to that. It is getting into the realm of the ridiculous now. Let us not make a farce of the proceedings here. We have been all over that shoe box board stuff before.
The Master: I have overruled the objection. Go ahead.
Mr. Schaefer: Will you read the question, Mr. Reporter?
(Mr. Schaefer's last question was read by the reporter as above recorded.)

1222 The Witness: A. To my knowledge, I did not.

Mr. Schaefer: Q. Now, what is your explanation for the fact that those tests conducted and reported before the institution of this litigation, those tests reported in Defendant's Exhibit 7, are appreciably higher in bacterial content than the results reported in Plaintiff's Exhibit 54?

A. Those two exhibits do not compare.

Q. They do not compare because the bacterial content—

Mr. Gariepy: I object to counsel stating the answer. He asked the witness a question and the witness said they do not compare. Let him answer why they do not compare. I object to this, Master. There is a limit to this thing. He is constantly telling the witness the answer. I object.

The Master: Overruled. Read the question.

Mr. Schaefer: I will withdraw that.

Q. For one reason they do not compare because the bacterial condition of the paper is slightly different, is that correct?

A. That is partly so.

Q. That is one reason?

A. That is one reason.

Q. What is the other reason?

A. The other reason is that the two tests were en-
1223 tirely different. In Exhibit 54, the test was to rinse out, by rinse tests, formed containers to determine the bacteria inside them. Exhibit 7 was a disintegration experiment of the paper, of the samples submitted to us.

Q. Now, will the difference between the result of a rinse test and the result of a disintegration test ordinarily be as striking as that shown on those two exhibits?

A. No. I would say that if you use paper No. 1 for the container, you will have more bacteria in the container.

The Master: What is that?

The Witness. Sample No. 1.

The Master: On what exhibit?

The Witness: Exhibit 7.

The Master: Defendant's Exhibit 7.

The Witness: But these papers were not necessarily used for paper containers, as I already explained. They were submitted as samples. That is a different thing. If the paper mill makes paper and makes samples, would it be acceptable for milk? We have said no. And any

industry that is interested in containers would not buy paper like that for containers.

Mr. Schaefer: Q. How do you know that, Doctor?

1224 A. It is self-protection of the industry.

Q. What do you know about the industry?

A. Well, I know pretty well what industries do.

Q. If they could buy that paper cheaper, you don't know whether they would buy it or not, do you?

A. I have no proof, except I know what the industry wants to do.

Q. You know this: You know that that paper is not fit for use in paper milk containers, don't you?

A. When it is as high as this?

Q. Indicating your results shown on Defendant's Exhibit 7.

Mr. Rall: Column 1.

The Witness: A. From a sanitary standpoint, the paper used for containers, from the samples in Column 1, my opinion is that it would, when formed into containers, meet in most cases the standards for the bacteriological condition of a container for milk.

Mr. Schaefer: Q. Including the standard fixed by the United States Public Health Service, that on a disintegration test the paper shall show a bacterial content of less than 100 per gram?

A. It would not fit then, because it would have to many bacteria.

1225 Q. With what standard would it comply?

A. It would comply with the standard of milk bottles, washed, sterilized, ready to receive milk, glass bottles.

Q. By that you mean the standard test for the bacteriological condition of glass bottles?

A. Yes, sir.

Q. Now, would it meet any standard that you know of that has been prescribed by anyone for the bacteriological condition of paper containers?

A. To my knowledge, there has not been any standard set, except this one in the recent meeting of the United States Public Health Service.

Q. Then that paper will not comply with the only existing standard, is that correct?

A. Those samples would not.

Mr. Rall: Contained in Column 1.

The Master: Indicating those in Column 1.

The Witness: Those indicated, about half of them, about forty-three of them.

Mr. Schaefer: Q. Forty-three out of how many?

A. Out of seventy.

The Master: Q. As I understand you to say, on Exhibit No. 54 all you did there was to conduct a rinse test?

A. Correct.

1226 Q. Which merely showed the bacteria on the inner surface of the container?

A. Correct.

Q. While in Defendant's Exhibit 7 you conducted a disintegration test?

A. Correct. Determined the number of bacteria enmeshed in the paper, as well as on the surface.

Q. Now, Exhibit 54 would not show any bacteria in the paper?

A. There would be some.

Q. That is, those that might be near the surface?

A. Yes.

Q. It would not show the bacteria down deep?

A. No, but I would anticipate that Sample 1 in Exhibit 7, if made into paper containers, would have higher counts.

Q. On the rinse tests?

A. On the rinse tests, yes, sir.

Mr. Schaefer: Q. In view of the experiments, the results of which are reported in Exhibits which show the results of your experiments, did you make any effort to determine the bacterial content of any Pure-Pak paper container, other than quart containers?

A. No.

Q. As a matter of fact, it is true, is it not, that it is much more difficult to efficiently paraffin pint and

1227 a half-pint containers than it is to paraffin quart containers?

A. I am unable to answer that.

Q. You have never discovered that in any of your experiments, Doctor?

A. No. I have examined them and to my knowledge I did not notice anything particular as between quarts and pints.

Q. In your opinion, Doctor, is it sound practice, from a public health point of view, to add antiseptic disinfectants to food, to prevent its decomposition?

A. It is, if it is permitted by the pure food laws.

Q. Do the pure food laws permit it?

A. Yes.

Q. Is it possible for the adhesive applied on the side walls and the bottom of the Pure-Pak container to come in contact with the milk in that container?

A. I think it is possible.

Q. Do you know whether germicides are used in that adhesive?

A. Sodium benzoate.

Q. Is used?

A. Yes.

Q. Are any other germicides used?

A. I was informed by the company that benzoate acid or sodium benzoate is used. I did not determine it myself.

1228 Q. Are any other germicides ever used in the making of adhesives for paper milk containers?

A. Not that I know of.

Q. On direct examination you stated that there would be a tendency for the filling machine used in filling glass bottles to contribute more bacteria to the milk than the machine used for filling Pure-Pak containers. Why is that so?

A. Because the filling machine for glass bottles has a great many more parts, rubber parts, springs in each belt, and, on general principles, the more complicated equipment is the more bacteria it will add.

Q. You have never conducted any experiments to indicate that, have you, Doctor?

A. Yes. We have examined into that in many, many cases, going into milk plants, examining the design of the whole system, including pumps, pipes, coolers, and so on.

Q. If the filling equipment is properly handled from a sanitary point of view in a glass bottle filling plant, will there be any tendency for that equipment to contribute a larger number of bacteria to the milk than a paper milk container?

A. There will.

1229 Q. As a matter of fact, regular milk bottle filling equipment is used also for some types of paper containers, is it not?

A. Yes, one type of paper containers.

Q. Do all the rest of them have special filling equipment?

A. Correct.

Q. And all the rest of that special filling equipment is more or less simple than in the case of the filling equipment for glass bottles?

A. I am referring to the Pure-Pak machine.

Q. Yes, but I am referring to all the others.

A. The complexity varies with the different ones.

Q. Will you compare the complexity of each one with the complexity of the filling equipment for glass bottles?

A. I don't like to refer by name to other makes and say that they are more complicated at this point.

Q. Well, you might as well, Doctor. There is no point in being bashful now.

A. Well, I have got in trouble already by referring to names. Not that there is anything to hide.

1230 (Question read by the Reporter.)

Mr. Gariepy: Do you understand the question?

The Witness: Yes, I just want a minute. I am just debating what to say.

The Master: Q. How many are there to compare?

A. Well, probably five.

Q. Go ahead and compare them.

A. Some of them I am not acquainted with fully.

Q. Well, that makes it less than five.

A. The Seal-Rite Container is filled on the regular glass bottle filler, with slight modification.

Q. Do those modifications make it more or less complicated?

A. Not more.

Q. That one is comparable to the ordinary glass bottle filler?

A. Pardon me.

Q. That one, the Seal-Rite is comparable to the glass bottle filling equipment?

A. Yes. The American Can machine has more parts, not the whole, but on the regular bottle equipment, bottling equipment, we have four or six or eight valves, not many more as a rule. The American Can Machine has 13 on the machine—I think 15 on the machine we used, so that there is more surface.

Q. And, therefore, a greater tendency to add more

1231 bacteria?

A. There would be a greater tendency to add a few more bacteria.

Q. Yes.

A. By the very nature of things.

Q. Yes. Any other containers?

A. I am not acquainted with the other containers.

Q. That is the only one?

A. The Seal-Cone and Reid and some others, I am not acquainted with them.

Q. I understood you to say on your direct examination, Doctor, that you applied the standard method of analysis to determine the sanitary aspect of the Pure-Pak Container?

A. Correct.

Q. Will you explain how you did that?

A. Repeat, that please.

The Master: Read the question.

(Question read by the Reporter.)

A. We used a standard method, rinse method.

Mr. Schaefer: Q. Is the rinse test a method of milk analysis?

A. That is a test of empty containers.

Q. Is it a method of milk analysis, at all?

A. No.

1232 Q. Then, you were referring to the rinse test when you said you used the standard method of milk analysis?

A. Did I make that statement?

Q. You just made it a second ago, Doctor.

Mr. Gariepy: I object to counsel arguing with the witness. You don't have to point out anything to him.

The Witness: May I explain?

Mr. Gariepy: Yes, explain.

The Witness: If I may explain, the standard methods of milk analysis is a publication giving various methods for milk containers and what-not, and I referred to the standard milk analysis in general in the book where the methods are given, and in the book a method for examination of empty sterile glass bottles; that is the method I used, in the publication "Standard Methods for Milk Analysis."

Mr. Schaefer: Q. That method you used is a standard method for determining the bacteriological condition of glass bottles?

A. Correct.

Q. Is that not so?

A. Correct.

Q. It has nothing whatsoever to do, then, does it, with determining the bacteriological condition of paper containers?

1233 A. To my knowledge, there is none except—

Q. Just a minute, Doctor.

Mr. Gariepy: Go ahead, Doctor. Pay no attention to that.

A. (Continued.) —except where the health officers or the United States Public Health Committee, last June, made another formula where they formulated, referring to paper—or where the committee suggests—that 100 bacteria per gram of paper board should be the standard for paper.

Mr. Schaefer: Q. That's right. Are you willing to accept my word that they said nothing about any rinse test?

A. I will.

Q. Assuming that the United States Public Health Service has not prescribed any rinse test as standard for determining the bacteriological content of paper milk containers, has such a standard been prescribed by any one?

A. Not that I know of.

Q. Then, you were in error when you stated on your direct examination, and when you stated just a moment ago, that you determined the bacteriological condition, or, rather, the sanitary aspects of the Pure-Pak Container in accordance with the standard method of milk

1234 analysis; is that correct?

A. Which is used for glass.

Q. But you did not determine the sanitary condition of the Pure-Pak Container with reference to any standard method for determining the bacteriological condition of the paper container, did you?

A. Strictly speaking, you are correct.

Q. The absorption shown by the methlyn blue test which you conducted showed that the absorption of that material was uniformly heaviest along the seams of the container, did it not?

A. No.

Q. Is that not true?

A. No. More around the corners where the paper was scored, rather than the seams.

Q. There were indications, however, from those tests of absorption in portions of the container away from the corners of the container?

A. Yes.

Q. Did you find any by the methlyn blue test that did not show absorption?

A. What is the question, please?

Q. Did you find any containers by the methlyn blue test that did not show absorption?

A. No.

1235 Q. When you were here a week or so ago, Doctor, you had with you a Dixie drinking cup which you referred to as a little Dixie drinking cup?

A. Yes.

Q. Do you remember whether you filled that cup to the top with the methlyn blue solution?

A. My recollection is that I filled it.

Q. To the top?

A. Yes.

Q. That is what I got from the transcript of the testimony, but I wasn't sure. Now, that cup which you brought here showed very much heavier absorption in the bottom of that cup than towards the top of the cup?

A. Yes.

Q. How do you account for that?

A. I don't know.

Q. Other than the methlyn blue test of the paper conducted to determine the quantity of milk absorbed into a paper container?

A. What I described yesterday.

Q. And that, as I remember it, was to fill the container with milk, allow it to remain filled with milk for how long?

A. About 24 hours, different lengths of time, it was.

Q. Varying lengths of time?

1236 A. Yes.

Q. After the container had been filled with milk and allowed to remain for varying periods of time, what did you do then, Doctor?

A. Poured the milk out.

Q. Yes.

A. Rinsed the milk out with water.

Q. Yes.

A. Then tried to get rid of the loose water in the container, and then weighed it.

The Master: Q. Weighed what?

A. Weighed the empty container.

Mr. Schaefer: Q. How did you try to get rid of the loose water in the container?

A. One way we tried it is to blow air, compressed air in the container for a very short time until you could see no drops of water.

Q. What other method did you use?

A. That was the principal method. Dr. Tracy may have tried something else that I don't know, when I was not present.

Q. That is the only method of which you are aware?

A. Yes.

Q. Why did you use a blast of compressed air to dry it?

A. To dry them quickly.

1237 Q. Why didn't you dry them with a cloth?

A. Well, I suppose we could do that, we could open them up and dry them with a cloth. That would be a good idea, too.

Q. Then you wouldn't have the possibility of the blast of compressed air removing some of the milk absorbed into the container, would you?

A. Correct.

Q. Now, was your observation uniform?

A. My recollections are that there was a variation.

Q. What were the results of the variation?

A. That I couldn't give you, off hand.

Q. There were variations?

A. There was some variation.

Q. What caused the variation?

A. That I don't know.

Q. With what size container did you perform these absorption tests?

A. Quart size.

Q. Did you ever do any with pints?

A. I don't believe so.

Q. Did you ever do any with half pints?

A. I don't believe so, although I don't know, Professor Tracy did some experimentation when I was not present. I don't know what he did.

Q. Then what did you do?
1238 A. Then we made plates from the milk.
Q. You examined the milk?
A. Yes.
Q. For B prodigeosis?
A. Yes.
Q. Your inoculating organism?
A. Yes.
Q. What does that have to do with the pouring lip?
A. Nothing, I said. I erroneously put it under that heading.
The Master: Well, it might have some reference.
Mr. Schaefer: You could have saved us a lot of trouble, if you hadn't.
The Master: Q. It might have some reference to it if the bacteria got in through the pouring lip?
A. That would be correct.
Q. It might get in through some other part?
A. Yes.
Q. But it might also get in through the pouring lip and that is the reason you included that test, test number four, in this exhibit, or that may be the reason?
A. The result would answer that question that you raised.
Mr. Schaefer: Q. Test number four, five, six and seven on plaintiff's exhibit 57 do not deal with the bac-
1239 terial contamination of milk by the pouring lip of Pure-Pak Containers, do they?
A. No.
The Master: You had better put in the record just what you two have in mind, concerning that pouring lip.
Mr. Schaefer: Q. Dr. Prucha, what do you mean by the pouring lip of a glass bottle or a paper milk container?
Mr. Gariepy: I think you had better define each, so you will get it clear.
Mr. Schaefer: Q. Is there any difference between the pouring lip of a glass bottle and the pouring lip of a paper milk container?
A. Well, my—the definition—
Q. Will you answer that question by yes or no, is there any difference between your pouring lip of a glass bottle and the pouring lip of a paper milk container?
A. No difference.

Q. Now, will you give your definition of the pouring lip?

A. That part of the container with which the milk comes in contact as you pour milk out.

The Master: Q. And the portion of the container
1240 with which the milk might come in contact as the milk is poured out would be not merely the aperture or opening through which the milk goes, but also in some instances the outside of the container?

A. Correct, that is reasonable.

Mr. Schaefer: Q. Neither does one, nor does two, nor does three described in plaintiff's exhibit 57, involve the use of pint or half pint Pure-Pak Containers?

A. No.

Q. When were you last at the plant of the Fieldcrest Dairies, Inc.?

A. I am sorry, I couldn't give you the exact date.

Q. Approximately?

A. Early in the spring.

Q. Of this year?

A. Yes.

Q. February or March?

A. No. A little later.

Q. March or April?

A. March or April, that would be my recollection.

Q. When were you last there before that?

A. I was there about four or five times between the time they opened and started to use paper containers, and the last visit—it was somewhat scattered during that period.

1241 Q. Can you fix the time when they opened?

A. They opened last fall, I was visiting my son in Winnetka at the time.

Q. We don't need that.

A. And he took me out there, so I don't recall. I could get the information, but I don't recall.

Q. Was it November or October?

A. Probably they could tell you, it was the second day they started to use the paper containers.

Q. Now, when you were there, in the spring of 1939, what did you do? Did you watch the operation of filling containers, on that occasion?

A. Oh, yes. We made tests on two different visits, with the paraffin, in the paraffining well, as to sterility.

Q. Yes, now, at that time—that was in the spring?
A. Yes.
Q. At that time did you test the temperature in the paraffining well?
A. I did not test it with a thermometer.
Q. Did you ever?
A. I read the thermometer on the machine.
Q. Did you ever test it with a thermometer?
A. No.
Q. Did you ever time the period during which the containers are immersed in paraffin?
1242 A. Yes.
Q. At Fieldcrest Dairies?
A. Yes. That is fixed.
Q. Did you ever time it?
A. Yes.
Q. With your own watch?
A. Yes.
Q. When was that?
A. It was at one of the visits, and it was a number of times when we had the machine at our place.
Q. Doctor, I am asking you about your visits to the Fieldcrest Dairy Plant, I don't care about what you did at your place.
A. I watched it, with my watch.
Q. On one occasion?
A. Yes.
Q. Since the machine has been at the Fieldcrest Dairies?
A. Yes.
Q. You timed it with your watch?
A. Yes, sir,
Q. You found it to be what?
A. Approximately 28 seconds for the container to stay in the paraffining compartment, and out of that time it was submerged 12 seconds, completely, and in a hot well, paraffin being molten, I think for 8 seconds.
1243 Q. You don't know of your own knowledge at what temperature the paraffin is being applied to containers at the Fieldcrest Plant in their every day operation, do you?
A. When I was there the thermometer read between 170 and 172 degrees F.
Mr. Schaefer: Read the question.
(Question read by the Reporter.)

A. I didn't take it with my thermometer.

The Master: Q. Well, do you know or don't you know?

A. Well, I don't know, aside from reading the thermometer.

Mr. Schaefer: Q. The last time you did that was in March or April, 1939?

A. Yes.

The Master: Q. What was the temperature at that time?

A. It hovered between 170 and 172 degrees F.

Mr. Schaefer: Q. Referring to these tests that you made at the Ogden Dairy, Doctor, with whom did you discuss the taking of those tests before you took them?

Mr. Gariepy: I object to that. He has already gone over the Ogden Dairy and said he couldn't remember the man's name.

Mr. Schaefer: That is not what I am asking.

1244 The Master: Overruled.

Mr. Schaefer: Read the question.

(Question read by the Reporter.)

A. The superintendent of the plant, his first name is "Ed", that is what I call him.

Q. Before you went to the plant, with whom did you discuss the taking of those tests?

A. Nobody.

Q. You and Dr. Tracy?

A. Just came—

Q. Just happened there, by coincidence?

A. No. We came purposely.

Q. With whom did you discuss the taking of those tests before you went to the plant of the Ogden Dairy?

Mr. Gariepy: I object. He has answered. He said no one.

The Master: Overruled.

A. We carried on a project among ourselves.

Mr. Schaefer: Q. I am asking you for names.

A. Among ourselves, Dr. Brannon and Professor Tracy and myself.

Q. You discussed it with Dr. Brannon and Professor Tracy, and with anyone else?

A. Myself.

Q. Did you discuss it with anyone else?

A. No.

1245 Q. At any time prior to the time you appeared at the Ogden Dairy?

A. No.

The Master: Let me ask the question this way:

Q. Did you discuss the making of tests similar to the one you conducted at the Ogden Dairy, with anyone before going there, specifically referring to that particular dairy?

A. No.

Mr. Schaefer: Q. In the conduct of the survey at the University of Illinois, do you and Dr. Tracy and Dr. Brannon go in a body to make a rinse test?

A. Yes.

Q. Do you always all three of you go?

A. Not all three, sometimes one, sometimes two, sometimes three.

Q. How often have all three of you gone?

A. Not many times.

Q. Have you ever, before?

A. Yes.

Q. Where?

A. About 1935 or 1934 we went to one of the neighboring towns.

Q. What towns?

A. I think it was—I don't recall offhand, either Bloomington or Decatur.

1246 Q. That is the last time you all three went in a body?

A. Yes.

Q. Have your expenses in connection with your trip to Chicago, to make that test, been paid?

The Master: Read the question.

(Question read by the Reporter.)

A. Yes.

Mr. Gariepy: Q. Referring to the Ogden Dairy test?

A. Yes.

Mr. Schaefer: Q. Who paid them?

A. The University paid Dr. Brannon and I was paid by the Dean Dairy Company for transportation.

The Master: Q. By whom?

A. Dean Milk Company.

Mr. Schaefer: Q. Did you explain to the Ogden Dairy Company that your expenses were being paid by the Dean Milk people?

A. No, I didn't say anything.

Q. In the conduct of your University of Illinois sur-

vey, generally, are your expenses paid by the Dean Milk Company?

A. No.

Q. In the conduct of your survey, generally, is it customary to report your findings to the Health De-
1247 partment in the jurisdiction in which your test is made?

A. No.

Q. In the conduct of your survey, generally, is it customary to report your findings to the dairy?

A. Yes.

Q. Why was that not done in this case?

A. It was an overlook.

Q. It was what?

A. We overlooked it. It was a mix-up.

Q. Did you state to any person at the Ogden Dairy whether or not the result of this test was to be offered in evidence in this case?

A. I didn't say anything to anybody.

The Master: Let's cut out a lot of questions here.

Q. All of the arrangements you made, Doctor, by what arrangement did you get any payment from the Dean Milk Company?

A. By what arrangement?

Q. Yes.

A. In connection with this lawsuit, there are certain things that were brought up and I wanted to perform them, like those six problems.

Q. Did you discuss with anybody your doing anything for which you might be paid?

A. No.

Q. What arrangements were made?

1248 A. No arrangement of any kind.

Q. Did you know before you went to this Ogden Dairy that your time would be paid for by the Dean Milk Company, or that you would get something from them for expenses, for your time and what not?

A. No specific arrangement, I was told that in case the University could not pay my expenses, and I would like to look into some phases of it, that my expenses would be paid.

Q. All right, now, who told you that—some representative of the Dean Milk Company?

A. Yes.

Q. You discussed with the Dean Milk Company or its representatives your work in connection with giving evidence in this case, is that right?

A. Some of the problems, yes; it was the problems of Dr. Arnold.

Q. You were told if you went to any expenses in money and incurred expenses in making of these investigations, you would be reimbursed?

A. For the traveling expense.

Q. Was there anything said about your time?

A. No.

Q. Have you been paid or do you expect any pay for your time?

A. No.

1249 The Master: Is that what you wanted?

Mr. Schaefer: Yes.

The Witness: No, I didn't receive five cents for my time.

The Master: Q. Have you gotten any fees anywhere along the line here for doing any of the work here?

A. No, aside from the exact traveling expense.

Q. Did you get any fees in this conference out here for these problems that Dr. Arnold wanted worked out?

A. No, I didn't get any.

Q. Didn't you fix a per diem or something for your work in connection with that, when you were here that time?

Mr. Gariepy: Don't shake your head, Doctor. Answer the question.

A. No.

Q. I thought there was some discussion here at the conference we had here of all of these doctors, whereby just the doctors would be compensated for their time in working out these problems that Dr. Arnold wanted worked out.

A. Yes.

Q. And I thought you said what you wanted per diem, is that right?

1250 A. For carrying out the problems?

Q. Yes.

A. Yes.

Q. Well, weren't you compensated for the time you had actually spent up to the time that the working out of these problems was abandoned?

A. No, not a penny.

The Master: All right. I think that is what you were getting at and so we have got it all out now, I think.

Q. Have you any arrangement or understanding or promise that you are going to be compensated for your expenses or for your time in this lawsuit?

A. No, none whatsoever, aside from information that Mr. Gariepy gave me, although it was no understanding, something like a dollar a day and traveling expenses, I don't know what.

Mr. Gariepy: If you are referring to me, all I gave you is subpoena fees, that is all I ever gave you in my life. Tell us if you had any conversation about fees of any kind.

A. I didn't intend—

Mr. Gariepy: Don't do that, don't mess me up in any fees here, I am not a party to any fees.

A. I have not been promised anything aside from traveling expenses. I have not handed in any expenses
1251 for my time.

The Master: I might add, it is quite customary for experts to be compensated for their time. That is what he is trying to get at.

The Witness: Yes.

The Master: He is trying to find out what, if anything, you are receiving, and who told you to do these things.

The Witness: We are working out these problems, this project, and I had an opportunity to do further study with the machine, and we didn't have it down there; it was here at Fieldcrest. We didn't have money in the treasury, in the budget.

The Master: Go ahead. Have you any more questions now, Mr. Schaefer?

Mr. Schaefer: That is all.

The Master: Are you through with the witness?

Mr. Gariepy: I would like to start in on Dr. Prucha, and I think it would be at least an hour or an hour and a half, and since it appears that the subject matter of the amount in controversy is going to be raised as an issue, and the facts constituting the subject matter of the controversy included in the stipulation by counsel for defendants—

Mr. Schaefer: That is not so.

Mr. Gariepy: All right, will you stipulate to it?

1252 Mr. Rall: Mr. Schaefer stated he could not stipulate to the ultimate fact, but we were to submit to him those evidenciary facts that we would expect to prove, to see whether he would agree to them.

Mr. Schaefer: That is a statement of what occurred. I have stipulated to one affidavit that, at the time, was what Mr. Gariepy told me his proof would be on that question.

The Master: Are you ready to proceed with the redirect examination, Mr. Gariepy?

Mr. Gariepy: Yes.

Redirect Examination by Mr. Gariepy.

Q. With regard to this matter of compensation for your services or in connection with your appearing in this cause, have you had any conversation with me with regard to being paid for any testimony you gave in this clause?

A. No.

Q. Have you ever received any money from me, other than $1.10 subpoena fees, when you were in the office the other day?

A. No.

Q. Mr. Schaefer asked you concerning conversations with somebody by the name of "Ed", as you gave it, at

1253 the Ogden Dairy, concerning this matter of making a report of the result of your test at the Ogden Dairy?

A. Yes.

Q. Did you talk to him last night concerning this matter of giving a report?

A. Yes.

Q. What did he tell you had happened as a result of not giving him a report?

Mr. Schaefer: That is objected to. How could a conversation he had with the superintendent alter this case?

Mr. Gariepy: He testified that they overlooked it and I want to show what happened as a result of the fact they overlooked it.

Mr. Schaefer: That is not material to any of the issues here.

Mr. Gariepy: I think it is very material.

The Master: I sustain the objection. I don't see any materiality as to what happened.

Mr. Gariepy: Why isn't it material to show what hap-

pened? He asked whether he gave them a report and you let him go into the report.

The Master: I sustain the objection.

Mr. Gariepy: I want to make my record.

The Master: Make your offer of proof.

1254 Mr. Gariepy: I offer to prove that Mr. Superintendent of the Ogden Dairy called Mr. Prucha last evening and informed him that the Board of Health had served notice upon the Ogden Dairy that the dairy must be closed and that the count was too high, and he asked Dr. Prucha whether he would appear at the Board of Health to aid him with regard to this matter of closing the Ogden Dairy.

I further want to bring in Mr. "Ed", the superintendent who had that conversation, and who called me several times last evening, concerning the closing of the dairy by the Board of Health, as result of this report.

The Master: I don't see the materiality of it.

Mr. Gariepy: I will offer it and put it into the record.

The Master: You may do that.

Mr. Schaefer: Do you want to see this?

Mr. Gariepy: Yes.

Q. Doctor, Mr. Schaefer has handed me a document dated July 25, 1939, concerning the City of Chicago paying Dr. Bailey $150.00 for services that he rendered in connection with conferences with the Master on these suggested procedures. Did you ever receive a copy of that letter

1255 or did you receive any letter from me that I was going to pay you in connection with this matter?

A. I received nothing.

Mr. Schaefer: State what the letter says.

Mr. Gariepy: The letter says that they will pay Dr. Bailey and we will pay whatever the bill of Dr. Prucha is, that is the sum and substance of the letter, is that right?

Mr. Schaefer: That is right.

Mr. Gariepy: Q. At whose suggestion did you go to the Fieldcrest Dairies plant at Chemung, Illinois, in the spring of 1939 and perform some check-up or tests with regard to the paraffin bath and the amount or the period of immersion of the container in the bath?

A. At my own initiative.

Q. For what other purpose other than your initiative, what was the object?

A. To find out the sterility or the bacteriological condition of the paraffin while it was being used.

Q. Had you performed any such tests and observations while this same Pure-Pak machine was at the University of Illinois?

A. I examined the paraffin once or twice, not in the same manner.

Q. Did you take any time count?

A. Yes.

1256 Mr. Schaefer: When and where.

Mr. Gariepy: I withdraw that. That is out at the University.

Q. As I remember your answer on cross-examination, you found the temperature of the paraffin was from 170 to 172 degrees?

A. Correct.

Q. Have you an opinion as to whether that temperature of paraffin being applied to the Pure-Pak Container in the paraffin bath for a period of 28 seconds will turn out and result in a safe and sanitary container from a public health standpoint?

A. Yes.

Q. What is that opinion?

A. That it is safe and sanitary.

Q. What are your reasons for your opinion and conclusion, Doctor?

A. The reasons are these: In the first place, the paper made for these containers is sterile, commercially speaking; that the paper as I have examined is protected, wrapped and sealed and sent to the carton company; there it is protected, being kept in special rooms. After it is printed and while it is being printed and handled, the operators in the paper mill are under medical inspec-

1257 tion, they are obliged to have their hands examined by a nurse in case they go out of the room, and before they come in; they have to report their health and, in other words, in the paper mill, the paper mill takes all possible precautions against any contaminations of paper by the attendants handling the paper.

Then the containers, after they are sealed, are again packed and sealed in cartons and shipped to the milk plant, so that when the paper container is taken out of the carton it is essentially sterile.

The paraffin which is being used is bacteriologically sterile, we never could find any bacteria in it.

After the container is paraffined it is not exposed to air,

so that it is not contaminated to any appreciable extent until it is filled with milk.

In other words, the paper is sanitary and the container before it is paraffined is sanitary. In addition, the paraffin, at that temperature, itself has a real bacteriacidal property, killing bacteria on the paper, it covers them in case some of those are not killed, like spores, it tends to cover them and hold them there.

This is further proof, we have examinations which are used in dairies for the purpose of examining contain-
1258 ers and all of the tests have shown that the container, so far as the number of bacteria in it, when the same method is applied to paper containers as glass containers—

Mr. Schaefer: I move to strike that as not responsive to the question, which dealt solely with his reasons.

Mr. Gariepy: I will agree that may go out.

The Master: It may go out.

Mr. Gariepy: Q. I am just asking you to give the reasons for your conclusion with regard to the paraffining of this container at this temperature for this period of time, exposure of 28 seconds in the bath?

A. Yes.

Q. Have you given all of those reasons?

A. Not quite.

Q. Give the next reason if you have one there?

A. We have a rinse test; we have a disintegration test of the container walls, all of which tests show that the containers are essentially free from bacteria.

Mr. Schaefer: I move to strike that last sentence as not responsive.

The Master: I will let it stand.

Mr. Gariepy: Q. Doctor, is it possible to have this
1259 machine set so that the temperature of the paraffin will be 180 degrees F?

A. Yes.

Q. Is it possible to have the immersion or the exposure for a time equalling or amounting to 30 seconds?

A. No.

Q. Can that be done by adding a valve or a cock on it and changing the gears? Just answer the question, yes or no.

A. I don't see any reason why not. There may be engineering difficulty there that I am not acquainted with.

Q. Would you say that the present bacteriacidal treat-

ment given to the Pure-Pak Container at the Fieldcrest Dairies, from 170 to 172 degrees F., at 28 seconds immersion or exposure is equivalent to the bacteriacidal treatment given if the machine were set at 180 degrees F. and 30 seconds exposure?

A. You would find no difference in the bacteriological condition of the container.

Q. Do you recommend now, from your experience and research work and study of this subject, that there be an advancement in the temperature or an increase in the height of the temperature at which the paraffin bath operated, from 170 to 172 degrees F. upwards?

1260 A. I don't see any advantage of a change.

Q. Mr. Schaefer has asked you on cross-examination with regard to the United States Public Health Service making some suggestions and recommendations regarding a standard concerning the paraffin bath and the container being given bacteriacidal treatment equivalent to contact with paraffin for at least 30 seconds and at least 180 degrees F. in approved equipment operated in an approved manner. Is this approved equipment, the Pure-Pak Container Machine at the Fieldcrest Dairies Plant? Do you consider that approved equipment from a sanitary standpoint and from your study and experience?

A. Yes.

Q. Is it operated in a sanitary manner?

A. Yes.

Q. Concerning this test upon the pouring lip, would you find any difference in the result in the event you had used pints or half pints, instead of quarts in performing these tests?

A. We don't find any difference.

Q. Would you find, or expect to find any difference if you had used pints or half pints or quarter pints?

Mr. Schaefer: I object to that. The witness says he never did any pints, half pints or quarter pints.

1261 The Master: He may answer.

Mr. Gariepy: I asked him whether he would expect to find any difference if it had been a pint, half pint or quarter pint, with the same pouring lip.

A. I would not.

Q. I am referring to Plaintiff's Exhibit 57 that you entitle "Test on the Pouring Lip." Those were quarts.

A. Those were quarts.

Q. With regard to these tests on absorption, you used quarts in performing those tests?

A. Yes.

Q. I asked you whether you would expect to find any difference in the amount of absorption, having in mind the area of the bottle, if you had used pints instead of quarts?

A. No difference whatever in proportion to the size.

Q. They are both made out of the same type of material?

A. Yes, sir.

Q. And the same paraffin?

A. Yes, sir.

Q. Is there any difference in the paraffin application on the pints and the half pints than there is on the
1262 quarts?

A. No.

Q. Is there any difference in the paraffin application, whatever, on the pouring lip on either of them, except in size?

A. No.

Q. Is there any difference in the pouring lip on either of them, except in size?

A. No.

Q. Concerning this absorption test, he asked you why you did not use a cloth instead of compressed air?

The Master: In drying the container.

Mr. Gariepy: He asked you why you did not use a cloth instead of compressed air before you tried to ascertain the result of the test as to the amount of absorption. If you had used the cloth, would you have been able to pick up all of the moisture with the cloth, as well as you could with the compressed air being applied?

A. It might be difficult to pick it out from the corners.

Q. Then the compressed air method would pick it up better and more accurately?

A. We thought so.

Q. Did you find anything with regard to using the compressed air on performing this test that showed or
1263 indicated that the milk penetrated and was absorbed into the board by reason of the fact you used the compressed air test?

A. The conclusion we drew, the only results we got were that the empty container increased in weight.

Q. You did not follow my question. Whether you found that with the compressed air method which you used in

drying the container, showed or indicated that there was any of the milk that was caused to penetrate into the board by reason of that method?

A. Yes.

Q. Did you find that the milk had gone in by reason of the fact you used the compressed air?

A. No, no.

A. Do you know of any regulation of the United States Public Health Service, or any suggested regulation they have where they mention that the container shall be a glass container?

A. Paper container is permitted, also.

Mr. Gariepy: I will have these three pages of typewritten material marked Plaintiff's Exhibit 61 for identification.

(Three typewritten pages referred to was thereupon marked by the Reporter "Plaintiff's Exhibit No. 61 for identification.")

1264 Q. You were asked on cross-examination concerning some recent suggestions of the United States Public Health Service, concerning bacteriacidal treatment and their rules and regulations, and you stated you had heard of them and seen them, or something to that effect, is that right?

A. Yes.

Q. I will ask you to look at Plaintiff's Exhibit 61 for identification and tell me whether that is what you saw and that is what you heard about?

A. That is what I saw. I saw a copy of it.

Q. Is there anything in that Plaintiff's Exhibit 61 for identification concerning glass bottles being used as an acceptable container or it being limited to glass bottles as the acceptable and only acceptable milk container?

A. No.

Q. With regard to the last line where an asterisk appears, referring to paragraph F above, this item * * * "temperature subject to change as result of further studies being conducted by the National Institute of Health." Who is this National Institute of Health, if you know?

A. I understand it is part of the United States Public Health Organization, Federal Security Agency, United States Public Health Service, Washington, D. C.

1265 Q. Do you know of any rule, regulation or suggestion from this body, United States Public Health

Service or this National Institute of Health which states that glass bottles alone are used and can be used as milk bottles?

A. No.

Q. Is the same standard that you used with regard to the Pure-Pak Container the same standard test and method equally applicable to glass containers?

A. I think so.

Q. Is another method and a more severe method applicable to the paper or Pure-Pak Container that is not applicable and can not be used on the glass container?

A. This disintegration test.

Q. Why is that more severe?

A. Because it shows the condition of the paper, sanitary condition of the paper even before it is paraffined, and after it is paraffined, a little more than the rinse test.

Q. Have you an opinion as to whether public health authorities have adequate and sufficient bacteriological control over the single service container now by reason of the rinse test and the disintegration test?

A. Yes.

1266 Q. What is that opinion?

A. My opinion is that it is more severe, the two tests together.

Q. When you say "the two tests together" you are referring to the rinse test and the disintegration test?

A. That is correct.

Q. You told Mr. Schaefer on cross-examination that you got in trouble referring to names. Was that this Ogden Dairy question you referred to?

A. Yes.

Q. This trouble was this call that you had as a result of it?

A. Yes.

Q. With regard to the chances of contamination as compared in the Pure-Pak Container equipment and machine, to the glass equipment and filling machine, what about the manual handling or the manual contact giving occasion for contamination in each? Compare them?

A. The manual handling?

Q. Or manual contact?

A. The filling compartment, the valves are taken apart and then cleaned and then they have to be assembled before they can be used.

Q. In what machine is this?

1267 A. That is in the glass filling machine.

Q. Where is there any handling of the paper container, Pure-Pak Container, in the Pure-Pak Machine?

A. In the Pure-Pak Machine the filling compartment is made up of only two—it has to also be assembled, to be handled to be put together, but it is much more simple to sterilize.

Q. Where is there any handling in the filling process in the Pure-Pak Machine, that is my question?

A. During the filling there is no handling.

Q. The human hand does not come in contact with it from the time the blanks are inserted in the machine until it comes out as the finished product, stapled and put into the cartons?

A. Yes, sir.

Q. Is that correct?

A. Correct.

Q. Concerning this matter of adhesives that you were asked about on cross examination and the fact that such preservatives as sodium benzoate is put in, do you know whether or not sodium benzoate is put in drinking cups in the formation and fabrication of making a complete drinking cup?

A. Wherever they use an adhesive.

Q. Is it used in paper straws?

A. The same thing with straws.

1268 Q. Straws that you use at the soda fountain when you sip liquids?

A. Wherever there is any paper stuck together, some sort of adhesive is used.

Q. Does that present any health problem?

A. No.

Q. Is it probable that this preservative such as sodium benzoate would come in contact with the milk?

A. The probability is remote, although an infinitesimal amount might come in contact with the milk.

Q. Suppose an infinitesimal amount did come in contact with milk, what would you expect the result to be?

A. Nothing.

The Master: Q. What do you mean by "nothing"? When you say "nothing" what do you mean?

A. There will be no effect of any kind on bacteria in the milk or in the healthfulness of the milk.

Q. How about taste?
A. Neither on the taste.
Q. Color?
A. Neither on the color.
Q. Neither on the color?
A. No.
Q. How about odor?
A. Not on odor, no influence of any kind.

1269 Mr. Schaefer: I move to strike that, because Dr. Prucha is not qualified to answer that question. He is not a doctor or a physician or a doctor of medicine. If he talks about taste, I don't care, but if he talks about anything else, he is not a doctor of medicine.

Mr. Rall: You asked about preservation.

The Master: We will qualify his answer and let it stand only as to the bacterial effect on the milk.

Mr. Gariepy: Q. Would it have any deleterious effect upon the milk if it should come in contact with it?
A. No.
Q. Do you know whether sodium benzoate is a preservative which is permitted by the United States Pure Food Laws?
A. It is permitted for preservation in foods.
Q. Is it used in such foods as ketchup?
A. Yes.
Q. What other foods?
The Master: Q. Well, is it used in milk?
A. No, you don't need to.
Q. What?
A. We don't need to.

Mr. Gariepy: Q. Concerning this matter of absorption and the result of the methlyn blue test as shown
1270 by your application of it on a Dixie cup and also on the Pure-Pak Container, would you say that the Pure-Pak Container shows less degree of absorption and less chances of absorption than the Dixie cup?
A. I would say less.
Q. Is there any difference, Doctor, in the efficiency of the paraffining whether it is done on a pint Pure-Pak Container or on a quart, as you were asked on cross-examination?

The Master: Just answer that question. Tell us.

Mr. Gariepy: Q. Is there any difference in the efficiency

of the paraffining on a pine container as compared with what job is done on the quart container?

A. My opinion is there is no difference.

Q. Concerning defendant's exhibit 7 which Mr. Schaefer showed you, and plaintiff's exhibit 54, the tests were higher in defendant's exhibit 7 than in plaintiff's exhibit 54 because of what reason?

A. That defendant's exhibit 7 refers to the disintegration of the paper board and the number of bacteria in it per gram. The other exhibit, plaintiff's exhibit 54, refers to the number of bacteria determined by the rinse test, I think, on unparaffined containers.

Q. That is also upon different types of board used in defendant's exhibit 7 than in plaintiff's exhibit 54?

1271 A. Yes.

Q. Does that also show that the disintegration test is a more severe test to ascertain the bacterial quantity?

A. Yes, sir.

Q. Defendant's exhibit 7 and plaintiff's exhibit 54, compared?

A. Yes, sir.

Q. If I remember right, looking at defendant's exhibit 7, you pointed out in the last column where the Cherry River paper board was shown up on the test?

A. Yes.

Q. And how the count on it reflected?

A. Yes.

Q. What did it show as compared with the other papers?

A. It was the lowest, it had the lowest bacterial count.

Q. How low, that is, comparatively and relatively, how low was it with regard to one thousand on a quart or one hundred per gram; was it within those radii?

A. It was below one hundred in all cases.

Q. You were asked whether the drying process, the drying effect of the paper board, played any part or had any effect in the results shown in plaintiff's exhibit

1272 46, as compared with plaintiff's exhibit 49, how much, if any, did the drying process in the board have any effect upon the results shown in either of those two tests?

A. I would have to see the exhibits.

Q. I show you plaintiff's exhibits 46 and 49.

A. The question again.

Mr. Gariepy: Read the question.

(Question read by the Reporter.)

A. Plaintiff's exhibit 46 was conducted purposely to show the effect of drying on a given bacteria. Plaintiff's exhibit 49, the results are from the rinse test of paraffined containers, or Pure-Pak.

Q. Has that anything to do with the drying process or the drying properties of the board, or the self-purification of the board, as you call it?

A. It does not, only so far as drying or dried condition of the containers before they were paraffined in plaintiff's exhibit 49.

Q. With regard to plaintiff's exhibit 46, and with reference to the absorption of moisture, does it not furnish a field—that is the moisture itself—for the growth of bacteria?

A. If drying is perfected?

Q. Answer my question?

1273 The Master: Read the question.

(Question read by the Reporter.)

A. If drying is prevented, they might grow in the paper, they might increase in the paper.

Q. If drying is—

A. Prevented.

Q. In other words, if they are wet?

A. Yes.

Mr. Gariepy: Q. Then the growth will continue?

A. Yes.

Q. Will that growth be of spore or non-spore forming bacteria?

A. Those would be of both.

Q. Both?

A. Yes.

Q. If they are wet?

A. Yes, that would be the tendency.

Q. What about these spots in the paper board that you were asked about on cross-examination?

A. Yes, I remember.

Q. What do you call spots, and how do they appear in the board and how do you explain them?

A. In the first place, I have never come across a single spot on the paper or in the containers, of the Pure-Pak Containers.

Mr. Schaefer: I move to strike that as not re-
1274 sponsive.

The Master: It may be stricken. Answer the question.

The Witness: What is it?

The Master: Read the question.

(Question read by the Reporter.)

Mr. Gariepy: I said board, now.

A. I see. We have examined them only in the paraffined container.

Q. Did you find any in the paraffined container, finished product?

A. We found in some containers—

Q. I mean Pure-Pak, now?

A. No.

Q. At any time?

A. No.

Q. In your two years and six months of research work, Doctor?

A. No.

Q. Go on and tell what these spots were that you found in the board, other than the Pure-Pak board, that you referred to.

The Master: Q. Did you find them in anybody else's board?

A. I found them in the finished containers.

1275 Q. You did?

A. Yes.

Mr. Gariepy: Q. Whose finished containers?

A. I prefer not to say.

Q. Was it Pure-Pak Container?

A. No.

Q. Was it any container where the board was made at the Cherry River Paper Mill?

A. No.

Q. Doctor, with regard to these spots Mr. Schaefer asked you about and called them slime spots, what are they?

A. We have tried to determine what they are, and they were not in all cases slime spots.

Mr. Schaefer: When did Mr. Schaefer call them slime spots?

Mr. Gariepy: Whatever he called them—spots.

A. Spots.

Q. What did you find them to be?

A. We found them to be always on the bottom of the container and it seems, so far as we could figure out, that the paraffin at that point got too hot or something and did not deposit a layer of paraffin, so that that spot was not paraffined sufficiently. They may in some cases have also been caused by the slime organisms.

1276 Q. Did you find any that were traceable to slime organisms?

A. We did not follow it up.

Q. In your two years and six months of research work?

A. No, we did not follow that point, because after a while it was corrected by the concern.

Q. With regard to this matter of taste in the Pure-Pak Container, and compared with taste in the glass bottle, do you know whether or not the effect of light upon the glass bottle has anything to do with the matter of taste of milk in the glass bottle?

A. Yes.

Q. What effect does it have?

Mr. Schaefer: If the Master please, I object to that, because that has already been gone into by another witness and, in the second place, it is not proper redirect examination.

The Master: I will let him answer, if he knows anything about the effect of light.

Mr. Gariepy: Read the question.

(Question read by the Reporter.)

A. We found upon tests that when a glass bottle of milk and a paper container of milk are exposed to sunlight, that the milk in the glass bottle will de-

1277 velop flavor very rapidly, whereas—

The Master: Q. What do you mean—sour flavor?

A. No. Due to the sun rays on some ingredient of the milk.

Mr. Gariepy: Q. Did you find there was any charge in the flavor of the milk in the Pure-Pak Container exposed to the sun at the same period of time?

A. No.

Q. Do you know that they use colored bottles for liquids, such as beer?

A. Yes.

Q. Do you know why they do that?

A. For that very purpose, the rays of the sun that do the harm do not penetrate the colored glass.

Q. When you referred to taste in this matter I am referring to, what was called by Mr. Schaefer as "off-flavor" due to exposure, did you understand that and do your answers fit that same definition concerning taste as "off-flavor"?

A. Off flavor.

The Master: Is this witness now testifying as an expert on bacteria and also as an expert on colors and taste?

Mr. Gariepy: He is testifying as an expert with regard to his experience on glass bottles and paper
1278 containers and putting them both to the same test to see how light affects them.

The Master: But he is not an expert on light.

Mr. Gariepy: Q. Does light enter into your work and research? Is it a factor?

A. It is a factor, yes.

The Master: Q. Insofar as your bacterial work is concerned?

A. The experiment is so simple that anybody can perform it.

The Master: Go ahead.

Mr. Gariepy: Q. Are some rays of light germicidal?

A. Yes.

Q. Doctor, in your examination of the Cherry River Paper Mill two years ago, did you find water in the calender stacks down there?

A. Yes.

Q. What with regard to the quality of the water in the stacks?

A. It was sterile.

Q. You told Mr. Schaefer that you thought it was advisable that medical inspection of the employes and such matters as dress be cared for and attended to at the paper mills. Do you have the same opinion with regard to dairies using glass bottles?

A. Yes.

1279 Q. Is there any difference or would there be any difference from an aesthetic standard or view?

A. No.

Q. The same principles are applied?

A. Yes, sir.

Q. To serve the same purpose?

A. Yes, sir.

Q. You also told him that you thought that means or

methods should be adopted to protect containers from contamination at the conversion plant. Do you know whether that is being done in the use of the Pure-Pak Containers, here?

A. Yes, sir.

Q. Referring to the Gardner-Richardson Plant?

A. Yes, sir.

Q. Do you know whether the methods employed at the Fieldcrest Dairy Plant, where containers are received in blanks, are to prevent contamination?

A. Yes.

Q. What are those methods?

A. They are sealed in the Gardner-Richardson place.

Q. Take the Fieldcrest Dairies, what are the methods at the Fieldcrest Dairies with regard to the blanks as they are received from Gardner-Richardson, to prevent contamination?

A. They come in sealed cartons and they are
1280 stored in a special room.

Q. What measures or precautions are taken in the storage to prevent contamination that you observed?

A. The room is used only for that purpose. It is kept clean.

Q. Did you see any health problem concerning storage and keeping of those containers before they are put into the machine?

A. No.

Q. You were asked concerning your 1937 report to the Milk Sanitarians at Louisville?

A. Yes.

Q. Doctor, with regard to this paper in 1937 that you read at the Louisville convention, what was that paper, what was your capacity and composition of the paper for that meeting?

A. It was presented on a program, it was presented as a progress report, in the study.

Q. After how many months of study did you present your progress report?

A. We started in February and this was presented in October.

Mr. Gariepy: I offer in evidence as plaintiff's exhibit 62 copy of the article referred to by Mr. Schaefer, having been delivered in Louisville in 1937, entitled "Sani-
1281 tary aspects of Paper Milk Containers," with the name "M. J. Prucha" under the title.

Mr. Schaefer: I object to receipt of that document in evidence.

The Master: You will supply that copy to the reporter who will mark it as plaintiff's exhibit 62.

Mr. Gariepy: Yes.

Mr. Schaefer: I object to its admission.

The Master: On what ground?

Mr. Schaefer: Several grounds, it is encumbering the record, and we are going to have a terrific record here.

The Master: It is just a small document. What is the second ground.

Mr. Schaefer: Second ground, that the substance of that exhibit is already in evidence in plaintiff's exhibit 4, and it is a needless, senseless duplication.

The Master: I will let it go in as being the whole of the article, portions of which were referred to by counsel for defendants.

(The said article so offered and received in evidence were marked "PLAINTIFF'S EXHIBIT NO. 62.)

Mr. Gariepy: I will ask that this typewritten material, consisting of seven sheets, be marked for identification as plaintiff's exhibit 63.

1282

(The said 7 sheets referred to were thereupon marked by the Reporter "Plaintiff's Exhibit No. 63 for identification.")

Mr. Gariepy: I ask leave to have this article—"Are paper milk containers sanitary?" identified as plaintiff's exhibit 63 and received in evidence; it being the same copy concerning which counsel has cross-examined the witness, and I ask leave to substitute for it a true copy.

Mr. Schaefer: I object to that, if the Master please, and I would like to amplify my objections to the preceding exhibit. Both of these exhibits are full hearsay.

The Master: The only thing that occurs to me is that if you try to introduce a statement for the purpose of contradicting the witness, and refer only to portions of it, the opposing side has a right to put in the whole statement.

Mr. Schaefer: I would think only such parts as refer to the matter in question, but, here, for example—look at that.

The Master: It is not proof of the facts therein stated. The only purpose of permitting the whole statement to go in is that the other portions not referred to by you

may explain and qualify the portions that you spe-
1283 cifically referred to; but introduction of the whole statement does not necessarily mean everything in it is to be taken as substantive proof of everything there stated.

Mr. Schaefer: That is the effect of it. It is awfully difficult to differentiate.

The Master: It is only introduced as being the whole of the statement referred to by the cross examiner, for the purpose of contradicting the witness, the rules under which the whole statement may go in.

Mr. Schaefer: If it is a book, the whole book goes on, but I submit that is not so.

The Master: I will let it go in under the rules which permit the whole statement to go in. If any one tries to use the statement for some other purpose, we can meet that situation when we come to it.

(Said 7 sheets referred to, so offered and received in evidence, were marked "PLAINTIFF'S EXHIBIT NO. 63," and same are hereto attached and made a part hereof.)

Mr. Gariepy: Q. Referring to plaintiff's exhibit 63 and the test that you set forth in that report, Doctor, shown on the top of page 210, entitled "Table 4—Killing B-coli on paper by dipping strips of inoculated paper in hot water—each strip inoculated with 5 million bac-
1284 teria," why isn't water used in this matter of turning out the finished product other than paraffin, if it has such good sterilizing effect as shown in this table?

A. It does not have waterproofing property.

Q. Is there anything else other than the waterproofing property being absent from hot water?

A. It would spoil the paper, soak it, and it is impossible to use it.

Q. This matter of the temperature of the water at 150 degrees as shown in Table 4 on plaintiff's exhibit 63, does that have anything to do with regard to the comparative temperature of paraffining at 170 or 172 degrees F?

A. I would say no.

Q. You answered a question concerning this matter of aesthetic and sanitary reasons. Does the aesthetic point or item have any bearing upon the sanitary qualities of the finished product itself, such as the Pure-Pak Container, here?

A. No.

The Master: Q. It might have?

A. It might have.

Mr. Gariepy: Q. In what way, Doctor? Will you explain to the Master?

A. We usually associate bacteria with dirt, so
1285 that wherever we have dirt you will have probably more bacteria of all kinds.

The Master: Q. You modify your answer "No," by that statement?

A. Yes.

Mr. Gariepy: Q. This aestheticity can be called and phrased as sort of window-dressing?

A. Yes.

Q. Besides the window-dressing, it gives to the product, or the effect, it has a sanitary objective, aesthetic as the hands touch it, or the conditions there?

A. Yes, sir.

Q. You were asked whether the thickness of the board here which was used, which was board described as the thickness in plaintiff's exhibit 46 of .017, the exposed edges on it had anything to do with the amount of bacteria found in the count. Does it, or not?

Mr. Schaefer: I submit no such question was asked.

Mr. Gariepy: You asked him if it did not have exposed edges, does this not increase the amount of absorption, and so on.

The Master: Let him answer.

Mr. Gariepy: Read the question.

1286 (Question read by the Reporter.)

A. No.

Q. Would the exposed edges, in your opinion, on this, have anything to do with the matter of the absorption?

A. I don't think so.

Q. Would the exposed edges on this have anything to do with whether the board was sterile or "unsterile" as you put it?

A. No, it would make no difference.

Q. This bacteriacidal effect of these hot rollers in the mill you were asked about, is that bacteriacidal effect due to the fact that the heat is in the rollers or due to the fact that the water is taken out of the paper board? Which is it?

A. I think it is due to the heat, fundamentally.

Q. If the water were not taken out of the board by the heat, what would you expect to find, concerning bacteria in the board?

A. It could not be killed.

Q. It could not be killed?

A. No.

Q. Why?

A. Well, if the rollers would not heat the paper enough to drive the moisture out, the water would not evap-
1287 orate and the paper would not be heated high enough.

Q. You were asked by Mr. Schaefer concerning this suspension that you used in plaintiff's exhibit 46, whether this suspension would give the contamination, the same as would be expected to be found in the use of the containers under normal conditions in a normal way. What would you say as to whether this suspension would or would not give the same amount of contamination as would be expected under normal conditions?

A. This contamination was many fold larger than would be expected.

Q. Why did you insert in this contamination or suspension a portion of sterile milk?

A. Duplicating, to some extent, the natural contamination where, as Mr. Schaefer indicated, as the nasal excretion—a little milk in the water protects the bacteria and they don't die quite as quickly as when pure water is used.

Q. You were also asked why it was that in your direct testimony you did not give the results of an experiment you reported in your November, 1938 article which is plaintiff's exhibit 63 here, where you used E-coli, show-
ing that the bacteria lived a period of four days, and
1288 instead of giving that, you gave the report in plain-
tiff's exhibit 46 here, showing a living bacteria for five hours. Were those two tests performed under the same conditions?

A. Not quite.

Q. What were the differences and how did you account for the different results you got?

A. In the first place, in the paper, I said—46—and I referred to both B-prodigeosis and B-coli, and clumped them together and gave a rough estimate of the dying of them as to time. That paper deals with, in general, things, rather than specific exact. To be on the safe side, I said it takes about four days. The tests have shown over and over again that that time is shorter.

Q. In one of these tests did you use the petrie dishes for dipping?

A. Yes.

Q. Which one was it, the test shown in the 1938 article, the one showing four days of life?

A. No. There is a table here showing the killing of B prodigeosis, that one experiment.

Q. It is one of these that you were cross examined about showing life as being five days, comparing it with plaintiff's exhibit 62, showing four days?

1289 A. It does not seem to be here.

Q. It is not in there?

A. No, except it gives a paper on drying.

Mr. Gariepy: May I see that exhibit about which you were asking the Doctor concerning that test in plaintiff's exhibit 62, as compared to the other?

Mr. Schaefer: Yes.

Mr. Gariepy: Q. Find this table here, Doctor, showing the longevity of bacteria as five days. That is plaintiff's exhibit 62.

A. B prodigeosis, paper strips dipped in bacteria suspension of 20 million cells per m.l.

Q. Referring to page 249 of your paper entitled "Are paper milk containers sanitary", about which Mr. Schaefer asked you.

The Master: What is the date of it?

Mr. Gariepy: 1938, November.

Mr. Rall: Dairy Manufactures Conference, November, 1938. November 16, 1938.

Mr. Gariepy: Q. The third paragraph on page 249, have you read it?

A. Yes, sir.

Q. Have you found now this report and this test referred to in your November, 1938 article, concerning the test to ascertain the longevity of bacteria and which

1290 showed that they lived for four days? Have you found that in this article?

A. Yes, sir.

Q. How does that test compare with the test shown on plaintiff's exhibit 46, with regard to the procedures used there?

A. The test differed in one respect, that after the strips of paper were inoculated and allowed to dry in the air, then they were put in petrie dishes to keep from air

contamination, and it may have been that they did not dry or were kept damp longer in there; that may be the explanation. I would add, however, that this statement is a general statement, not referred to any specific test, a general statement from a number of tests.

Q. On what kind of board?

A. On paper board used for paper containers.

Mr. Schaefer: Q. When you say "this statement" you refer to the statement which you just read from your 1938 paper?

A. Yes, sir.

Mr. Gariepy: Q. With regard to this matter of computation of the result of your test in plaintiff's exhibit 49, is the computation that you made here, and the manner in which you made computations in performing these
1291 tests and arriving at these results the standard method used by bacteriologists in the laboratory?

A. Yes, sir.

Q. I will ask you the same question with regard to the results shown on plaintiff's exhibit 51, and your method of t..oulating or estimating the amount of bacteria in performing that test. Were those methods by which you computed and estimated the amount of bacteria, as referred to on cross-examination, the usual standard method employed by bacteriologists in laboratories?

A. Yes.

Q. Is there any better method than that method you employed to accurately ascertain the results? Do you know of any better one?

A. No.

Q. Concerning this matter of a certified list, or a list of certified mills, do you know of any such list of mills that is certified today by anybody to public health sanitarians?

A. No.

Q. With the rinse test and the disintegration test applicable upon the paper board, as compared with the rinse test applicable upon the glass milk bottle at the dairy, do you find any occasion for a list of those mills first to be given before the public health is protected by public
1292 health authorities in supplying milk in paper containers?

The Master: I don't know what you mean.

(Question read by the Reporter.)

Mr. Gariepy: I withdraw the question. I am going to make it shorter.

Q. You talked about the certified mills, or the mills being certified by a list?

A. Yes.

Q. You told Mr. Schaefer you thought some sort of referee or somebody ought to be selected to do it; do you remember that?

A. Yes, sir.

Q. Having that in mind, and also having in mind the test that the paper container may be put to, that is the rinse test and the disintegration test; comparing that test with the test that is applicable for the same purpose of ascertaining the sanitary condition of the glass bottle, which is the rinse test, are you of the opinion that public health would now be preserved without any such certified list of mills being given to public health officials, or it only applying the disintegration test and the rinse test on the paper container?

A. Yes, sir.

Q. It would be?

1293 A. Yes.

Q. Do you know any industry where there is a certified list of mills or a certified list of manufacturers given to any authorities before they use the product? Have you recommended any such thing in your forty years of experience as a bacteriologist?

Mr. Schaefer: I submit that question has been answered. I asked him that.

The Master: Let him answer it again.

A. As I recall, I said no.

Mr. Schaefer: That is right.

Mr. Gariepy: Q. Did you have any trouble, without examining the mills from which you obtained this board, in finding from defendant's exhibit 7 which mills supplied the paper board here that gave the lower bacteria count as shown in the third right hand column?

A. No.

Q. Why?

A. I don't get the force of the question.

Q. Why were you able to pick out in defendant's exhibit 7—performing the test in here on these various kinds of paper board—the mills from which this respective board

came that had a low bacteria count, as you pointed out in the third column on the right hand column?

1294 A. Because they had a low count on bacteria in the board.

Q. That indicated, or proved, what?

A. That indicated that they practiced steps to keep bacteria down, keeping contamination out and preventing bacterial growth.

Q. Could you do that from examining the board in this test here?

A. I think so.

Q. Mr. Schaefer asked you why it was in the November, 1937 article, which is plaintiff's exhibit 62, that you were of the opinion now that 170 degrees F. paraffining at 20 seconds immersion would be sufficient, and in 1937 at the meeting of milk sanitarians in Louisville you reported that when the board is sterile and when the containers are handled and packed and transported so that they will not become contamined, and the containers are paraffined to 185 degrees for 30 seconds or longer, that containers will be fully as safe as any container can be. He asked you why you have that difference of opinion now than what you announced in this report in 1937.

A. May I read one sentence to bring it out?

Q. Give your answer.

1295 A. This paper is a report on the progress, which means that we had a limited amount of information, and we based our conclusions on what we had.

Q. How many weeks or months of observation and experiments did you have at that time, in 1937?

A. Running over about six or seven months.

Q. Does your experience since that time justify the opinion that you gave Mr. Schaefer concerning 170 degrees F.

A. Yes.

Q. Did you at any time when the machine was at the University operate the machine at a temperature of 180 degrees F. in the ordinary course of conducting the dairy?

A. Yes.

Q. Did you operate the machine at 170 degrees F. temperature in the paraffin bath?

A. Yes.

Q. Also?

A. Yes.

Q. Did you find any difference in the sanitary quality of the paper container turned out between the two temperatures?

A. No.

Q. Will you look at plaintiff's exhibit 51, concerning which you were cross-examined about; can you tell
1296 from the results of the tests which you ran and which are explained by plaintiff's exhibit 51 here, whether the paraffining had any sterilizing effect upon this board?

A. Yes.

Q. What does it show?

A. It shows that the paraffining either destroys all of the bacteria put on the plate or once in awhile some may go through.

Q. What does it show with regard to the quality of the board so far as sterility is concerned?

A. To all purposes, the paraffined strips would be considered sterile.

Q. In cross-examination, Mr. Schaefer asked you concerning this matter of spots which might be called slime spots, how they happened, and you replied that they happened by the "laws of probability". What did you mean by that?

A. I am sorry.

Q. Do you remember that, Doctor?

A. I remember the discussion on that. I don't know how to answer—the probability.

Q. You answered you would explain it as a happening by the laws of probability, that is what you said.

Mr. Schaefer: I submit the record won't show that.

1297 Mr. Gariepy: Q. What did you say, Doctor?

The Master: Do you remember, or don't you?

The Witness: No.

The Master: He doesn't remember. Go ahead.

The Witness: Just what do you refer to?

Mr. Gariepy: That is all.

The Master: Is there any recross examination?

Mr. Schaefer: Yes.

The Master: Proceed.

Recross Examination by Mr. Schaefer.

Q. Doctor, the brownish patches to which I referred on cross-examination manifested themselves as brownish patches in the paper under the paraffin, did they not?

A. It was in the paper usually on the bottom.
Q. Under the paraffin?
A. Yes.
Q. Is that right?
A. Under the paraffin, yes.
Q. And they were paper defects, is that right?
A. I call them paper defects.
Q. They appeared to you to have been caused by some hydrolitic change in the pulp, is that correct?
A. Yes.
Q. Were you ever at the Gardner-Richardson Plant?
A. Yes.

1298 Q. In your redirect examination a moment ago you looked at defendant's exhibit 7 and you stated that you were able to identify the four last counts, number 67 to 70 on that exhibit, as being counts on paper coming from the Cherry River Mill?
A. Yes.
Q. That paper was shipped to you from the Cherry River Mill, was it not?
A. Yes.
Q. You kept a record then of the samples of paper used in that experiment, did you not?
A. Yes.
Q. As to the source of the samples?
A. I received bundles of paper, yes.
Q. You kept a record of the source of each one of those samples?
A. Yes.
Q. So that you knew, from the sample?
A. Yes.
Q. Regardless of the count, that that paper came from the Cherry River Mill?
A. Yes, sir.
Q. Is that correct?
A. That is correct?
Q. You were not able to ascertain that it came from the Cherry River Mill simply because it was a count of

1299 zero, were you?
A. No. I can show you the notes, I have them with me.
Q. You did not determine it simply by looking to see that the count was zero?
A. I know because I was interested in it, I know that

those came—not only those, but there were some higher ones in it, too.

Q. Between 1937 and 1939 has there been any change in the bacteriacidal effect of the application of paraffin at a given temperature and for a given period of time upon a piece of paper board?

A. No.

Q. Referring to plaintiff's exhibit 46, which was the self purification experiment, how much skim milk did you add to your bacterial suspension?

A. One per cent.

Q. One per cent?

A. Yes.

Q. In your opinion, does that one per cent and just that one per cent afford a bacteria in that suspension for production of a nutrition comparable to that which bacteria from a nasal secretion would receive?

A. I did not determine that.

Q. You did not determine that?

1300 A. No, sir.

Mr. Schaefer: That is all.

The Master: Have you any further redirect examination?

Mr. Gariepy: Just a few questions.

The Master: Proceed.

Redirect Examination by Mr. Gariepy.

Q. Nasal secretion is not usually found about dairies, is it, Doctor?

A. No, sir.

Q. Or in glas bottles or paper bottles?

A. No. We try to keep it out.

Q. Wouldn't the count on defendant's exhibit 7, which Mr. Schaefer asked you about, be determinative to you as to where the paper board came from, or the source of the board?

A. It would, in one respect—not so much as to the name of the mill, but when paper—

Q. Whether it would be fit to be used for milk containers or not?

A. Yes, sir.

Q. It would indicate that?

A. Yes.

Mr. Gariepy: That is all.

The Master: Are you through with this witness now?

1301 Mr. Gariepy: Yes.

The Master: Doctor, you are excused.

(Witness excused.)

Mr. Gariepy: I offer in evidence plaintiff's exhibit 61, which is the United States Public Health Service suggestion and recommendation, that counsel has cross-examined the witness about.

Mr. Schaefer: I have no objection to its receipt.

The Master: It may be received.

(Said pamphlet so offered and received in evidence was marked "PLAINTIFF'S EXHIBIT NO. 61", and is attached hereto and made a part hereof.)

(Discussion off the record.)

The Master: We will continue on Monday at 10:00 o'clock.

(Whereupon the further hearing in the above entitled cause was continued to Monday, September 25, 1939, at 10:00 o'clock, a. m.)

1302 * * (Caption) * *

Monday, September 25, 1939,
10:00 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy,
Mr. Rall,
Mr. Schaefer,
Mr. Horan.

1303 Mr. Rall: Before we start with the next witness, as a substitute for Plaintiff's Exhibit 61, consisting of three pages, which were a typewritten copy, we should like to substitute the original letter and the original enclosure, also to be known as Plaintiff's Exhibit 61, and withdraw the previous copy.

The Master: That may be done.

(The original copy of Plaintiff's Exhibit 61, referred to, consisting of three sheets, was thereupon substituted and also marked Plaintiff's Exhibit 61.)

Mr. Rall: Will you mark this Plaintiff's Exhibit 63?

(The document was marked by the reporter as requested.)

The Master: What case are you referring to, Fieldcrest, or your plaintiff, Mr. Rall?

Mr. Rall: I am talking about the Fieldcrest case now, your Honor. Now, if the Master please, may Plaintiff's Exhibit 63 that has been marked this morning be substituted for the tissue copy of Plaintiff's Exhibit 63 which was receied the other day, and withdraw this Exhibit 63?

The Master: Yes.

(The substitution was thereupon made of Plaintiff's Exhibit 63, as referred to above.)

1304 Mr. Rall: Mr. Reporter, will you mark this photostat Plaintiff's Exhibit 62?

(The document was marked by the reporter as requested.)

Mr. Rall: This is a photostat of the address by Dr. Prucha at the 1937 Louisville convention of the International Association of Milk Sanitarians, a reprint from the Journal of Milk Technology, the title being "Sanitary Aspects of Paper Milk Containers," and being a substitute for Plaintiff's Exhibit 62 referred to by Dr. Prucha the other day, and which we have now had photostated.

The Master: That may be substituted.

(The substitution of Plaintiff's Exhibit 62 was thereupon made.)

Mr. Rall: On the question of jurisdictional amount, the Fieldcrest Dairies has decided, after examining the authorities, that it would be unsafe to rely on a stipulation, but we should state for the record that this testimony is necessary for that reason and not because counsel for the city were in any respect unreasonable in refusing to make an agreement.

1305 S. E. DEAN, JR., called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please.
A. S. E. Dean, Jr.
Q. And your address.
A. 20 North Wacker Drive.
Q. Chicago?
A. Chicago, Illinois.

Q. What is your business?
A. Milk.
Q. Are you connected with Fieldcrest Dairies, Inc., the plaintiff?
A. Yes.
Q. In what capacity?
A. President.
Q. And as president of Fieldcrest Dairies have you knowledge concerning the assets of the plaintiff corporation with regard to the sale and distribution of milk?
A. I have.
Q. How many Ex-Cell-O machines does Fieldcrest Dairies at this time have, that are leased from the Ex-Cell-O Corporation, for the purpose of packaging and selling Pure-Pak containers?
A. Two.
Q. How many are in operation at this time and
1306 being used daily at the plant?
A. One.
Q. What is being done with the other machine?
A. The second machine was installed in order to take care of the prospective business we had in the city of Chicago when and if we received a permit to operate.
Q. And what was the price paid for the lease of that second machine, which is now dormant?
A. $12,000.
Q. And that machine is still at the Chemung plant, or where it is located?
A. At Chemung, Illinois.
Q. Is the other machine being used daily for supplying the suburban demand at this time, of milk in Pure-Pak containers?
A. We are operating the one machine at about forty to fifty per cent capacity.
The Master: What do you mean by suburban demand?
Mr. Gariepy: The suburbs of Chicago.
Q. What is the capacity with regard to quarts per hour that the idle machine now can be used during an eight-hour shift in the dairy, eight hours running?
A. Approximately 7,500 cartons per eight-hour day.
Q. Do you know whether Fieldcrest Dairies, Inc., has asurances at this time and whether they had them previous
to the filing of this suit concerning the sale of milk
1307 in Pure-Pak containers in the city of Chicago, if such permission was obtained from the Board of Health?

A. Yes. We interviewed a number of prospective customers and we had assurances that we would receive a sufficient amount of business to justify our placing the second machine in our Chemung plant.

Q. And the second machine was secured and purchased after those conferences and after receiving those assurances?

A. That is correct.

Q. And how much were those assurances of the sale of milk, in the number of quarts per day, in the city of Chicago, that you received?

A. Will you repeat that, please?

Q. How much in quantity, I am referring to, in the matter of sales of milk did you receive assurances that you could sell in the city of Chicago, just previous to the purchase of the second Ex-Cell-O machine?

A. We estimated we could sell at least the output of this one machine we have on hand.

Q. Which is how many thousand per day?

A. Approximately seventeen to eighteen thousand.

1308 Q. Did you have these assurances during the year of 1938?

A. Yes.

Q. And during the past ten months or eleven months, Mr. Dean, what in your opinion has been the loss to Fieldcrest Dairies by reason of the fact you have not been able to use this machine and to sell milk on these assurances and commitments in the city of Chicago?

A. To the best of my belief, we could have made not less than $10,000.

The Master: Q. Do you mean profit?

A. Profit on that operation, that is right.

Q. Over what period?

A. He asked me about the first ten months of this year.

Mr. Gariepy: Q. Since December, 1938, up to the present time.

A. Yes.

Q. How many trucks does the Fieldcrest Dairies have and use at this time, with regard to the sale of single service containers in these Pure-Pak bottles?

A. We are using nine at the present time.

Q. Have you any trucks idle?

A. Yes.

Q. How many?

A. Fifteen.

Q. And what was the cost of those trucks and when were they purchased?

A. The trucks cost approximately $2100 apiece. Twelve of them were purchased in early 1938. Twelve of them were purchased the early part of 1939.

1309

Q. Have any of those fifteen trucks—are there fifteen idle?

A. That is correct.

Q. Have any of those fifteen trucks been used since purchased for the distribution of milk in Pure-Pak containers?

A. No.

Q. Or in the city of Chicago for the sale of milk?

A. No.

Q. Were those trucks purchased at or about the time that you secured the second machine from the Ex-Cell-O Corporation, that you testified to?

A. Approximately at the same time, to the best of my recollection.

Q. Have you an opinion as to the loss to Fieldcrest Dairies, Inc. on account of the non-use of these trucks, since their purchase in 1938, due to the fact you are unable to use them on the sale of milk in single service containers, Pure-Pak containers, in the city?

A. Well, you can charge off only the depreciation, which would amount to approximately $3500. Of course, the fact the trucks set idle for an extended period of time necessitates an overhauling before you can begin to operate them again, and I expect we will have some added expense on top of that.

1310

Q. What would you say or what is your opinion of the value of doing business in the city of Chicago at this time to the Fieldcrest Dairies, per year, conservatively estimated, that is, from selling milk in single service Pure-Pak containers?

A. I believe that the Fieldcrest Dairies' operation, based on very conservative estimates of our sales, would be worth at least $10,000 per year to us, net profit.

Q. On 17,500 quarts of milk what would be a reasonable return, a conservative return per quart, at your dairy, in the way of profit?

A. A very efficiently operated dairy, under today's conditions, would net, in my judgment, between one and one-half and two per cent on their dollar sales. Reducing this to a quart basis, in compliance with your question,

would put the figures out into the third or fourth decimal point.

Q. Reducing the 17,500 quarts to this basis of so much a quart, how much would you gain on such sales?

A. It would be between thirty and thirty-five dollars per day net profit.

Q. How long have you been in the milk business, 1311 Mr. Dean?

A. We were incorporated in 1933, as the Dean Milk Company. Fieldcrest Dairies was incorporated in 1938.

Q. Under what state was the Fieldcrest Dairies incorporated?

A. The state of Michigan.

Mr. Gariepy: Mark this Plaintiff's Exhibit 64 for identification, please.

(The document referred to, being a charter of the Fieldcrest Dairies from the State of Michigan, was thereupon markel Plaintiff's Exhibit 64 for identification.)

Mr. Gariepy: Q. I show you Plaintiff's Exhibit No. 64 for identification, which is a photostatic copy of a Michigan incorporation from the Michigan Corporation and Securities Commission. Is that a photostatic copy of the charter that you obtained in 1937?

A. It is.

The Master: For the Fieldcrest Dairies?

Mr. Gariepy: Q. For the Fieldcrest Dairies, Inc.?

A. Yes, sir.

Q. And is the corporation still in good standing with the Corporation Department of the State of Michigan?

A. That is correct.

The Master: Q. Has it been admitted to do busi-1312 ness in Illinois?

A. Yes.

Mr. Gariepy: I have got that just here.

The Master: I see.

Mr. Gariepy: I offer that in evidence as Plaintiff's Exhibit No. 64.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photostatic copy of charter of Fieldchest Dairies in the State of Michigan so offered and received in evidence was marked PLAINTIFF'S EXHIBIT 64 and is attached hereto and made a part hereof.)

Mr. Gariepy: Will you mark this, Mr. Reporter, Plaintiff's Exhibit 65 for identification?

(The document referred to, being certificate of compliance, No. 2631, of the State of Illinois, was thereupon marked Plaintiff's Exhibit 65 for identification.)

Mr. Gariepy: Q. Mr. Dean, I show you Exhibit No. 65, which purports to be a certificate of compliance, Certificate No. 2631, from the Corporation Department of the
1313 State of Illinois, for doing business in this state, issued to Fieldcrest Dairies. Did you receive that on or about the date it bears, November 29, 1937?

A. That is right.

Q. And is the certificate still in full force with regard to your permission to do business in this state?

A. It is.

Q. Fieldcrest Dairies?

A. It is.

Q. Is Fieldcrest Dairies a separate corporation from Dean Milk Company, Inc.?

A. It is.

Mr. Gariepy: I offer it in evidence as Plaintiff's Exhibit 65.

Mr. Schaefer: No objection.

The Master: It may be received.

(Said document, being photostatic copy of Certificate of Compliance No. 2631 from the Corporation Department of the State of Illinois, issued to the Fieldcrest Dairies, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 65 and is attached hereto and made a part hereof.)

Mr. Gariepy: Q. And the sales that you have testified to, on which you based your opinion and gave your judgment, are with regard to sales by Fieldcrest Dairies, Inc.?

A. That is right.

1314 Q. You did not answer my previous question, Mr. Dean. How long have you been connected with the milk industry yourself?

A. Since October, 1930.

Q. And in what capacity? What experience have you had in the milk industry that you use in giving these figures and this testimony this morning?

A. I worked in the plants, various milk plants, until the latter part of 1933. Subsequent to that time I was doing office work and sales work in connection with evaporated and fresh milk.

Q. Do your duties have anything to do with the purchase of supplies and checking sales?

A. Yes.

Q. And the matter of the field where you operate and the extent of your sales and things like that, are you acquainted with those too?

A. Yes.

Q. Do those come under your jurisdiction?

A. Yes, they do.

Q. They are a part of your duties?

A. They are.

Q. What relation has Dean Milk Company to Fieldcrest Dairies, Inc., the plaintiff?

A. In 1935, members of the organization of the
1315 Dean Milk Company became interested in the distribution of milk and milk products in single service milk containers. In January, as the Dean Milk Company, we applied for a permit—

The Master: Q. January what year?

A. 1936. (Continuing.) —we applied for a permit from the Chicago Board of Health to use single service containers in the Chicago market. At this same time the Dean Milk Company was distributing, through the grocery stores of the city of Chicago, an evaporated milk sold under the trade name of Dean's Evaporated Milk.

It was at first considered a poor move to sell both fresh milk and evaporated milk under the same trade name, because there might be a confusion in the consumer's mind as to whether our advertising referred to the fresh milk or evaporated milk. We decided it would be a poor policy, and in accordance with this we incorporated the Fieldcrest Dairies, intending at the time to sell the milk under the trade name of Fieldcrest.

Further discussion of this entire problem with advertising men and others convinced us that selling both products
under the same trade name would be beneficial to each
1316 product, rather than detrimental. That is why we sell the fresh milk and the evaporated milk both under the trade name of Dean. That is why, Master, you see Dean's name on this box.

Q. You sell them both under the name of Dean?

A. Yes.

Q. Then what is there left for Fieldcrest?

A. The Fieldcrest Dairies distribute Dean's milk.

Q. Fieldcrest is merely a distributor?

A. They are the whole operation. We can put any trade name we want to on any product.

Q. You work under both names, is that it?

A. We do not advertise the name of Fieldcrest Dairies. We advertise the words "Dean's Milk."

Mr. Gariepy: Q. They are two separate corporations, with two separate sets of offices?

A. That is correct.

Mr. Gariepy: That is all, Mr. Dean.

The Master: Q. Fieldcrest is the one that is trying to distribute these single service containers?

A. That is correct.

Q. Is Dean trying to do that too?

A. No. The Dean Milk Company is interested only in evaporated milk packed in small 14½ ounce size.

Mr. Gariepy: Q. This testimony you gave concerning the single service containers and the investment re-
1317 lates to Fieldcrest Dairies only?

A. That is right.

The Master: Q. The Dean Company also sells fresh milk?

A. No, the Dean Milk Company sells no fresh milk. The Fieldcrest Dairies sells fresh milk. The Fieldcrest Dairies sells Dean's brand. We might call it Poppy brand or any other name. We chose to call it Dean's brand. Fieldcrest Dairies sells Dean's brand of milk.

Mr. Gariepy: That is all.

The Master: Any cross?

Mr. Schaefer: No cross-examination.

The Master: All right.

(Witness excused.)

Mr. Gariepy: Dr. White, will you take the stand, please.

JOHN L. WHITE, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. Will you state your name?

A. John L. White.

1318 Q. And your address?

A. 5415 South Carpenter street, Chicago.

Q. And your business, Doctor?

A. I am a bacteriologist.
Q. Connected with whom?
A. The Chicago Board of Health.
Q. How long have you been such?
A. I have been associated with the Chicago Board of Health in various capacities since 1910.
The Master: Q. And still are?
A. Yes.
Mr. Gariepy: Q. How long have you been bacteriologist for the Chicago Board of Health?
A. I was senior bacteriologist starting the year of 1912, to approximately the year 1923; principal bacteriologist from 1923 to 1927; assistant director of laboratories and research from 1927 to 1932, and chief of the laboratories from 1932 to the present date.
Q. And as chief of the laboratories from 1932 to the present time, what are your duties with regard to the matter of checking the bacteria content with respect to containers used in the city of Chicago for the sale of fresh fluid milk?
A. As chief of the bureau of laboratories, Department of Health, I have general supervision and administra-
1319 tion duties in connection with the activities of the laboratory. Now then, in the checking of bacterial milk counts my duties are of a general nature. I do not personally conduct this work.
Q. Who does?
A. The present bacteriologist who is making the routine counts of milk in the laboratories is Robert Beers.
Q. Do you have anything to do with the checking of the containers used in the city of Chicago for the sale of milk so as to ascertain the bacterial condition of the same?
A. In a supervisory capacity and administrative capacity only.
Q. Have you since 1933 to 1937, in your capacity as bacteriologist, had occasion to visit any of the paper mills that are making paper containers for the sale of liquids, such as chocolate milk, Coca-Cola, ice cream, or other liquids that are sold from soda fountains and drug stores in the city of Chicago, in paper containers?
A. Would you repeat that whole question, please?
Mr. Gariepy: Read it to him.
(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. I have not.

Mr. Gariepy: Q. The same question with regard 1320 from 1932 up to the present time, 1939. Does that same answer hold?

A. I have not visited any paper mills.

Q. What have you done in your capacity as bacteriologist during the past seven years with regard to any examination of these paper containers that I have just described in my former question, in order to ascertain their bacterial content?

Mr. Schaefer: That is objected to, if the Master please. In the absence of a showing—if you want me to amplify the objection—in the absence of a showing that the products enumerated in the question are of the same nature and similar hazards would be involved in their distribution, the question is immaterial. No such showing has been made.

The Master: Read the question.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

Mr. Schaefer: I might say further that this entire matter has been covered by stipulation.

Mr. Gariepy: I would like Mr. Rall to answer that. We discussed it this morning, concerning the extent of our stipulation, which I have here.

Mr. Rall: The stipulation did not apply to liquid 1321 milk.

The Master: I don't hear you.

Mr. Rall: The stipulation does not cover the subject of liquid milk. I think Mr. Schaefer's point is well taken as to anything other than liquid milk.

Mr. Gariepy: The stipulation that is in the record at this time is that—

The Master: That is Exhibit what, or is it an exhibit?

Mr. Gariepy: It is not an exhibit. It was read into the record.

The Master: I see.

Mr. Gariepy: The stipulation in this record at this time is that ice cream, butter, lard, cottage cheese and other kinds of cheese, oysters, pickles, soft drinks and liquid coffee are sold daily in the city of Chicago, at retail, in paraffined paper cartons made of virgin spruce pulp, that ice cream is sold daily in the city of Chicago by manufacturers of ice cream to retailers of ice cream in metal cans with a thin paraffined paper liner between

the ice cream and the metal container, that thin paraffined paper is permitted by the Board of Health of the City of Chicago to be placed across the top of metal milk cans underneath the metal cover of such cans, that paraffined drinking cups and paraffined paper straws
1322 are used daily in the city of Chicago, and that paraffined paper liners for dishes in which ice cream is served are also used daily in the city of Chicago, that in none of these cases is any objection made by the Board of Health of the City of Chicago, nor are any tests conducted by it to determine the sanitary quality of the paper so used.

You can see that nothing in regard to liquid milk is stated.

The Master: Let us assume all of these are within the same category you contend; would the fact that they just came to the conclusion that they ought to require such inspections make any difference?

Mr. Gariepy: I think it is very significant.

The Master: They may have decided that milk is something that should be so inspected or should be given a sort of inspection of the containers and it may be that they will request such inspection in the others also.

Mr. Gariepy: I think we have to take the facts, Master, as they are today. What they may do in the future is an entirely different thing. The ordinance may be changed or something. We don't know.

The Master: The fact that they may or may not
1323 have required it on other things is not necessarily determinative on the conclusion that there should be such inspection of milk.

Mr. Gariepy: It is significant with regard to the attitude of the Board of Health toward the single service container. If these other milk products are permitted to be sold by and with the consent of the Board of Health without any inspection and without any control concerning bacteria, why should the Board of Health become unduly conscious about it just about the time that plaintiff's application comes in for using this. There must be some reason for it.

The Master: They say there is, and if they have been negligent in the other matter that does not necessarily mean that they should be negligent in this matter.

Mr. Gariepy: We don't charge them with negligence. We charge them with failing to enforce and permitting

these other containers to be sold containing these different liquids.

The Master: While I am inclined to agree with Mr. Schaefer at this time, that the question has no particular relevancy on the pertinency of the question before the court now, I will let the witness answer this question.

1324 Mr. Gariepy: Read the last question.

The Master: The question is: What have you done in your capacity as bacteriologist during the past seven years with regard to an examination of these paper containers that I have just described in my former question, in order to ascertain their bacterial content?

The Witness: A. These paper containers refer to what content?

Mr. Gariepy: Bacteria.

The Witness: No, I mean the ingredients in the paper.

The Master: For the sale of liquids such as chocolate milk, Coca-Cola, ice cream, and other liquids that are sold. What is it? Pickles?

Mr. Gariepy: Pickles, oysters, cheese.

The Master: That he enumerated.

The Witness: A. I don't think that we have made any bacterial examination of such kinds.

Mr. Gariepy: Q. Have you or anybody else in the Board of Health during the past ten years visited the mills in which those containers are made, in order to inspect conditions in those mills where such containers are manufactured?

A. I have not, but as to whether anybody else has, I cannot answer. I don't know.

1325 Q. You don't know?

A. I don't know.

Q. Do you know whether or not you can purchase milk in the city of Chicago today in paper containers, to be carried out to your office or to be taken home, from places that dispense milk in glass bottles?

Mr. Schaefer: That is objected to.

The Master: Read the question.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Master: What is your objection, Mr. Schaefer?

Mr. Schaefer: If such a practice exists, if it is possible, it is a violation of the ordinance of the city and of the regulations themselves.

The Master: And what is your answer?

Mr. Gariepy: My answer is that if the ordinance is to be enforced it must be enforced uniformly. If they have a rule and regulation in the Board of Health and that rule and regulation is disregarded and people are permitted to carry out milk in paper containers in the city of Chicago today, then the ordinance has lost all its force and effect, by reason of the fact it is not applied uniformly, and there is a discrimination in that case.

The Master: Read the question again.

1326 (Mr. Gariepy's question was again read by the reporter as above recorded.)

The Master: I will sustain the objection.

Mr. Gariepy: Q. Do you, Dr. White, have anything to do with the matter of the approval of the containers that are used for the sale of milk in restaurants and drug stores?

A. That is not a function of the laboratory. I do not have anything to do with that.

Q. Dr. White, do you make any examination of the containers that are used for the sale of fresh fluid milk from restaurants in the city of Chicago?

A. We do make examination of containers in which fluid milk is sold. Now, where those containers are obtained, that is, where the containers may be sold, I do not have any knowledge of that. I presume they may come from restaurants at times.

Q. What examination do you make of said containers?

A. We make bacteriological examinations of bottles, milk bottles.

Q. And those bacteriological examinations, do they consist of rinse tests?

A. What do you understand by the rinse test?

Q. What do you understand by the rinse test, as a bacteriologist, Doctor?

A. Well, the rinse test that we use, and which I

1327 presume you have in mind, is the placing of sterile water in a supposed sterile container, rinsing the bottle thoroughly with the water, and then making a bacterial count on the water.

Q. Right.

A. Yes.

Q. Is that the test you perform?

A. Yes, we do make such tests on milk bottles.

Q. Do you make any other tests on milk bottles, other than this rinse test you have just described?

A. No, I don't think we make any other.

Q. Do you make rinse tests on these other paper containers that are used in the city of Chicago for the sale of milk products, such as cheese and butter?

Mr. Schaefer: That is objected to. That is covered by the stipulation.

Mr. Gariepy: Not whether he made an inspection.

The Master: I will let him answer the question.

The Witness: The question is—

Mr. Gariepy: Read the question.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. No.

The Master: Q. When you say these other paper containers, do I understand you to say that the con-
1328 tainers in which milk is sold from restaurants are made out of paper?

A. No. I infer there it is a bottle container.

Q. You mean a glass bottle container?

A. Yes.

Q. One is a paper bottle and the other is a glass bottle?

A. That is right.

The Master: Then you had perhaps better reframe your question, Mr. Gariepy. You say "these other."

Mr. Gariepy: Q. Do you make any other tests, other than the rinse tests, on glass containers, Doctor?

A. No, we do not.

Q. Do you make any examination of the glass containers that are used in the city of Chicago, by going outside of the city of Chicago to ascertain where they are made, or anything about them, or the methods used in making them?

The Master: That is glass containers?

Mr. Gariepy: Yes.

The Witness: A. Let me get this question. Do you ask whether we make any inspection or examination of glass bottles manufactured outside of the city of Chicago?

Mr. Gariepy: Q. That is right.

A. I do not know the source of the manufactur-
1329 ing of these bottles, but we do make an examination of all bottles submitted to the laboratories by the dairy products section of the Health Department.

Q. Do you know where they obtain those bottles?

A. They obtain them, as I understand, in their process

of inspection of milk plants, dairies and so forth, in the city.

Q. But as far as going outside of the city or going to the glass mills or anything of that sort is concerned, you do nothing of that?

A. No, I do not.

Q. Does anybody in the department do any of that?

A. That I cannot answer. I do not know.

Q. Do you perform any bacteriological tests on paper containers that are used in the city of Chicago daily for the sale of these products that I described as oysters and Coca-Cola and liquid drinks, in drug store?

Mr. Schaefer: I submit that has been covered by stipulation.

The Master: I will let him answer.

Mr. Schaefer: The purpose of stipulating and working it out, it seems to me, is entirely lost if we spend the morning doing this.

The Master: Let him answer.

The Witness: A. I do not recall any such con-
1330 containers bei g examined in the city health de-
partment.

Mr. Gariepy: Q. Have you ever seen any such containers as these four paper containers that I exhibit to you now, that are filled with milk? Lift them, Doctor. Open the cap of each one of them, will you?

Mr. Schaefer: That is objected to, if the Master please. Here we are on an excursion again.

Mr. Gariepy: No, we are not on an excursion. We are inquiring into the facts in the city of Chicago today concerning the selling of milk in paper containers.

Mr. Schaefer: The ordinance prohibits the sale of milk in that way. It cannot be contradicted.

The Master: I sustained an objection to a question in which you asked whether he knew that milk was purchased in paper containers in Chicago. What is your present question. Is it whether they are inspecting such containers?

Mr. Gariepy: Read my question, Mr. Reporter, please.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Master: I sustain the objection to the question as immaterial.

Mr. Gariepy: Q. Doctor White, do you know whether

milk, Grade A milk, can be purchased in the city of
1331 Chicago today in such containers as are exhibited before you now?

Mr. Schaefer: That is objected to.

The Master: I sustain the objection.

Mr. Gariepy: Q. Have you, in your experience, Doctor, in the Board of Health, as a bacteriologist, had occasion to make any tests upon the bacterial content of these containers, the paper in them?

Mr. Schaefer: That has been covered by stipulation.

The Master: Are you objecting to it?

Mr. Schaefer: I am objecting, yes.

The Master: I will sustain the objection.

Mr. Gariepy: If the Master please, that you may get the significance of this, may I read Section 3094 of the Mayor Kelly milk ordinance involved in this case, which reads as follows:—

The Master: Is that the law in force now?

Mr. Gariepy: In force today.

The Master: All right.

Mr. Gariepy: "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles, provided, however, that nothing herein contained shall be construed to prohibit hotels,
1332 soda fountains, restaurants and similar establishments from dispensing milk or milk products in sanitary dispensers approved by the Board of Health."

That is the end of Section 3094.

The Master: Is there any contention that paper containers for milk to be sold from soda fountains and so forth have been approved by the Board of Health?

Mr. Gariepy: If they have not been approved by the Board of Health formally, they have been approved by the Board of Health permitting the sale of those to constantly go on daily. They cannot wink at the ordinance in one case and not in the other.

The Master: There is no evidence of that, any more than is suggested in Mr. Schaefer's statement here a little while ago off the record, about the government permitting the sale of liquor during prohibition just because a great many people sold it.

Mr. Gariepy: I don't think that has any analogy at all, Master.

The Master: Why not?

Mr. Gariepy: We are trying to prove that the City of Chicago, through its Board of Health, permits these to be sold and they are being sold daily in these containers.

1333 The Master: You have not proved it yet. You have asked him whether he has examined these containers and so on.

Mr. Gariepy: Q. And your answer has been what, Doctor? Has it been no?

A. I have not answered it.

The Master: He has not answered the question. I will sustain the objection.

Mr. Gariepy: Q. Do you know whether the Board of Health of the City of Chicago has approved the sale of milk in paper containers, such as are exhibited before you here now?

Mr. Schaefer: That is objected to.

The Master: Out of drug stores and soda fountains?

Mr. Gariepy: I will read the ordinance, so there is no question about it.

Q. The ordinance of the City of Chicago, Dr. White, if you do not know, provides that the Board of Health of the City of Chicago may approve of the sale of fresh fluid milk from hotels, soda fountains, restaurants and similar establishments. Do you know whether they have approved the sale of milk in these types of containers that are exhibited here before you now?

1334 The Master: Being paper containers.

Mr. Gariepy: Q. Being four paper containers with the lids off, filled with milk.

The Master: I will let him answer.

Mr. Schaefer: If the Master please, there is a way to prove an official act of the Board of Health.

The Master: The only question is whether he knows.

Mr. Schaefer: That, I submit, is immaterial, whether he knows or not. In any event, the question is objectionable.

The Master: I will let him answer, if he knows.

The Witness: A. I don't know whether the Board of Health has approved the sale of milk in these containers.

Mr. Gariepy: Q. Do you know of any containers that the Board of Health has approved the sale of milk in, from restaurants and hotels and similar establishments?

Mr. Schaefer: That is objected to for the same reason.

The Master: I will let him answer, if he knows.

The Witness: A. I don't know of any action taken by the Board of Health in this matter.

Mr. Gariepy: Q. What do you mean, in this matter?

A. The sale of milk in containers from restaurants and hotels.

Q. Do you know whether there is any bacterial
1335 test made on any paper containers in the city of Chicago, ice cream containers?

Mr. Schaefer: That is objected to, if the Master please. The question again has been asked and answered and covered by stipulation.

The Master: I will let him answer.

The Witness: What was the question?

Mr. Gariepy: Read it, please.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. I do not recall any tests made of paper containers.

Mr. Gariepy: Q. And if such tests were made, would you have knowledge of them, being chief of the bacteriological department?

A. I believe I would.

Mr. Gariepy: That is all, Doctor.

Mr. Schaefer: No cross-examination, Doctor.

The Master: That is all, thank you.

(Witness excused.)

1336 Mr. Gariepy: Mr. Bunta, be sworn, please.

ANDREW BUNTA, called as a witness on behalf of plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. What is your name?
A. Andrew Bunta.
Q. Where do you live?
A. 4750 North Long avenue.
Q. Chicago?
A. Chicago, Illinois, right.
Q. What is your business?
A. I am a law clerk.
Q. Are you working in my office?
A. I am.

Q. Did you have occasion on Saturday to go about the loop and to purchase milk in paper containers, in the city of Chicago?

A. I did.

Q. And what stores, drug stores, did you go to to purchase milk in paper containers?

Mr. Schaefer: That is objected to, if the Master please. We are on the same line of interrogation now.

The Master: I will let him answer that question.

The Witness: A. I went to three drug stores.

Mr. Gariepy: Q. Name each one of them in order, Mr. Bunta.

1337 A. My first stop was at the Von Hermann drug store.

Q. Where is it?

A. Which is in the 111 West Washington street building.

Q. The next one?

A. Was in a Liggett drug store which is in the 33 North LaSalle street building.

Q. The next one.

A. My third one was in the Loop drug store, which is located in the 100 North LaSalle street building.

Q. Did you purchase some milk there in paper containers?

A. I did.

Q. Will you look at the paper containers that are exhibited before you on the table and pick out which ones you purchased and where you purchased them?

Mr. Schaefer: Just a moment. I move to strike the answer to the last question, did he purchase milk in these drug stores in paper containers.

The Master: Read the last question.

(The question referred to was read as follows: "Did you purchase some milk there in paper containers?")

The Master: And the answer was that he did?

Mr. Schaefer: Yes.

The Master: You move to strike it?

Mr. Schaefer: Yes.

The Master: On what ground?

1338 Mr. Schaefer: On the ground that if the milk was so purchased, it was sold in violation of the ordinance. It cannot have any bearing on any issues in this case.

The Master: I will let him answer. Go ahead.

The Witness: A. I did purchase milk in each one of the enumerated drug stores.

Mr. Gariepy: Q. Will you look at the large one here, which has the word "Liggett" written on it. Did you purchase the milk now contained in this container in the Liggett's drug store that you identified?

A. I did.

Q. Did you ask them for milk to take out?

A. I did.

Q. And they put it in this container and you took it out?

A. That is right.

Q. The second container here, which is a "Nestrite" container and also has the words "Personal Service" on it; where did you purchase that?

A. I purchased that in the Loop drug store.

Q. Which one?

A. Located in the 100 North LaSalle street building.

Q. What did you ask for when you purchased that?

A. I asked for milk in a paper container.

Q. And they gave this to you?

A. They did.

1339 Q. And the third one here?

A. I purchased that in the von Hermann drug store.

Q. With the lady's head on it?

A. Yes.

Q. Did you ask for milk there?

A. I did.

Q. Did you ask them in any particular way for it?

A. I asked for milk in a paper container.

Q. And they gave you this?

A. Yes.

Q. As a matter of fact they gave you the three here in the same way?

A. They did.

Q. And did you bring those three to my office with the caps on, these three loose caps?

A. I did.

The Master: These three, to describe them for the record, are in the shape of ordinary tumblers or glasses.

Mr. Gariepy: Glasses.

The Master: With a disk which forms a cover, on top?

Mr. Gariepy: Disk caps, with a tab for lifting them off and on, fitting the tops.

The Master: Yes.

Mr. Gariepy: Fitting neatly over the top and sinking in over the lip of each one of them.

Q. Are these in the same condition now, Mr. Bunta, as they were at the time you purchased them?

1340 A. They are.

Q. Except for the caps being loose?

A. That is right.

Q. How far were these places or these drug stores where you purchased these from the city hall?

Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: Q. How far were they from the Board of Health offices, now located at Austin avenue, upon the north side, where the old Criminal Courts used to be?

Mr. Schaefer: That is objected to.

The Master: No, I will reverse my ruling. I will let him answer both questions.

The Witness: Which one do you want me to answer?

Mr. Gariepy: Q. The first question was how far were the stores where you purchased these containers, that you just described in your testimony, from the city hall, where the Board of Health is located?

A. They are within a radius of three hundred feet.

Mr. Schaefer: The Board of Health offices are not located in the city hall. It doesn't make any difference, but it does not state a fact.

Mr. Gariepy: The Board of Health used to be located over there and they moved to Austin avenue on the

1341 north side.

Mr. Schaefer: That is objected to. They did not move to Austin avenue on the north side.

The Master: It does not make any difference. Go ahead.

Mr. Schaefer: The Board of Health is located at 54 West Hubbard street, if you want to put your question that way.

The Master: Didn't that use to be known as Austin avenue?

Mr. Schaefer: I don't know.

Mr. Gariepy: Q. Mr. Bunta, these were all purchased in the loop?

A. They were.

Q. And within a radius of three hundred feet from the city hall?

A. That is right.

Mr. Gariepy: Cross-examine.

Mr. Schaefer: No cross-examination.

The Master: That is all.

(Witness excused.)

Mr. Gariepy: Mr. King.

1342 BRUCE KING, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name?

A. Bruce King.

Q. Where do you live?

A. 231 North Water avenue, Chicago, Illinois.

Q. And your business or profession?

A. I am an attorney.

Q. Are you employed at my office?

A. I am.

Q. On Saturday, September 23, 1939, did you have occasion to purchase milk at the Stineway drug store in the Field Building, in the loop?

A. I did.

Q. I show you a container that bears the name "Stineway." Did you purchase that in that drug store?

A. I did.

Q. About what time of day?

A. About 2 o'clock in the afternoon.

Q. What was the occasion for purchasing this container of milk, with the words "Carry Out Service" on the outside?

A. I entered the drug store and asked for some 1343 milk, carry-out service, to be taken out.

The Master: Q. In a paper container?

A. In a paper container.

Mr. Gariepy: Q. And they gave you this here?

A. The clerk dispensed that from a glass bottle and put it in this particular container.

Q. And you took it to the office?

A. And I took it to the office.

Q. Is it in the same condition now as it was then, with the exception that the cap has been removed from the top?

A. It is.

Mr. Gariepy: That is all.

Mr. Schaefer: No cross-examination.

(Witness excused.)

Mr. Gariepy: I think for the record these containers that the witnesses have identified ought to be described, Master.

The Master: They have already been described.

Mr. Gariepy: The Stineway was not described. The Stineway container, that Mr. King referred to, contains on the side "Stineway Drug Stores, Carry-Out Service."

The other side has some writing on it which has no
1344 bearing here. The Liggett container has the words "Fountain Service" written below the word "Liggett's."

Mr. Schaefer: And it is colored blue.

Mr. Gariepy: And colored blue.

The Master: All right.

Mr. Gariepy: Mr. Faust, be sworn, please.

E. R. FAUST, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name.

A. E. R. Faust.

Q. Your address.

A. 230 North Michigan Boulevard.

Q. Your business and occupation?

A. Advertising.

Q. What type of advertising do you do, Mr. Faust?

A. Do you care to enlarge on that question?

Q. Is it commercial advertising or what is it?

A. Advertising agency.

Q. Did you have occasion, during the month of May, 1939, to ascertain the matter of where milk bottles are secured that are used in the city of Chicago?

A. I did.

Q. Did I give you the exact date, May 11th?

1345 A. May 9th, 10th, and 11th.

Q. And what did you do, Mr. Faust, first, on

May 10, 1939, in the city of Chicago, with regard to ascertaining the places where glass milk bottles are obtained and secured, as used in the city of Chicago?

A. On May 10th I visited the Illinois Central Railroad yards, at the loading dock, where rubbish from the city of Chicago is deposited before it is rehandled and put into railroad cars to be hauled outside of the city. Then I visited the Cook County Hospital, the Cook County Morgue, to see if I could find any bottles used there as temporary containers. Then I visited several—wait a minute. That is the first day.

Q. All right. The next day, what did you do?

A. The next day we visited these same spots.

The Master: Q. We?

A. I and a photographer visited these same spots, where we saw bottles deposited in piles of dirt in the Illinois Central yard, bottles loaded on a car full of rubbish in the yards, which we dislodged; bottles, empty bottles, in the Cook County morgue; and then we went to a junkyard at 643 O'Brien street, where we saw what I call
pickers. They would be men with push carts, bring-
1346 ing in used milk bottles for storage in the junkyard
at 643 O'Brien street. And then the photographer and I went to the city dump at 19th street and Lincoln street, where we saw bottles—make that a bottle—picked from a pile of rubbish by a man who was accustomed to stay there to pick bottles from the rubbish.

Mr. Schaefer: That is objected to.

The Master: Yes, that may be stricken.

Mr. Gariepy: All right.

Q. Just tell what you saw.

A. I saw him pick up a bottle from the rubbish pile.

The Master: Q. A milk bottle?

A. A milk bottle, yes, a pint bottle in that case. Then we went across the street, the east side of Lincoln street, where we saw a colored picker, who had a—

Mr. Schaefer: I object to the "colored picker," if the Master please.

The Witness: All right.

Mr. Gariepy: Q. What was he doing, that colored man?

A. He had a push cart loaded with waste paper and old metal. He had a gunnysack tied on the cart, filled with used quart bottles.

The Master: Q. Milk bottles?

A. Milk bottles. Then we went to a junk yard at
1347 2048 West Lake street, where we saw stacks of cases, empty cases of bottles, milk bottles. Let me see. That terminated that day's activities.

Mr. Gariepy: Q. What did you do the next day with regard to ascertaining the source of these glass bottles?

A. That was not the next day, Mr. Gariepy. That was a later date. July 11th, or thereabouts.

Q. 1939?

A. Yes.

Q. Where did you go that day?

A. On that day we went to the Milk Dealers Bottle Exchange—

The Master: Q. We?

A. I did alone. (Continuing.) —at Blue Island and Damen avenue. The first activity in the morning was to follow a White truck—that is the make of the truck—carry a stake body, bearing the sign "Milk Dealers Bottle Exchange." I followed this truck, which was loaded with empty crates, to a junkyard at the corner of Erie and Morgan streets, where the truck backed into a yard, threw off the empty crates and loaded again with the same type of crates filled with empty milk bottles.

Mr. Gariepy: Q. Where did that truck go from there?

1348 A. That truck then proceeded over the same route back to the Milk Dealers Bottle Exchange, and drove up the driveway of the Exchange, back into the loading dock, and began to throw off bottles.

Then the afternoon of the same day—no—just shortly after noon this same truck carrying filled bottles, filled cases, rather, of empty quart milk bottles, drove to the Polonia Dairy—the address slips my mind—where it unloaded its cases filled with empty bottles.

Then I left the truck at the dairy and went back to the Milk Bottle Exchange, where I saw an older make of White truck than the one I just left, carrying a stake body, bearing the sign "Chicago Dealers Milk Bottle Exchange." This truck traveled down Blue Island avenue, to a junkyard at the corner of Washburne avenue and Blue Island avenue, or near the corner. It is on Washburne, west of Blue Island. The truck was loaded with empty crates. The truck backed into the loading driveway of the junkyard, threw off its empty crates, filled up with crates filled with empty used milk bottles, and then went back to the

Milk Dealers Bottle Exchange, where it entered the driveway. The last I saw of it, it was behind another
1349 White truck filled with empty bottles, waiting in the driveway.

Q. Did you have occasion to take pictures of the activities of these trucks in the places that you visited on these three days?

A. I had occasion to take pictures—starting from the last day back—take pictures of the two trucks unloading and loading at the junkyards. I did not have a camera in the morning—the previous day or, rather, the previous day of activity, the photographer who was with me took pictures of the bottles we saw in the places where we found them and in some cases took pictures including me in the scene, showing me and the empty bottles.

Mr. Gariepy: Q. Mr. Reporter, mark this Exhibit 66.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 66 for identification.)

Mr. Gariepy: Q. I show you Exhibit No. 66. Is that the Milk Bottle Exchange building that is shown there and a milk truck or the crate-bottle truck that you referred to in your testimony?

A. That is right. That is the last truck described.

Q. And does that picture correctly and accurately portray the conditions as you observed them with the naked eye at the time the picture was taken?

1350 A. It does.

Q. When was that?

A. July 11th.

The Master: Q. What year?

A. This year. I might check that date, Mr. Gariepy. No, correction. June 29th was the last day's activity.

Mr. Gariepy: Mark this the next number, please, Mr. Reporter.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 67 for identification.)

Mr. Gariepy: Q. Look at Exhibit 67 that the Master is handing you now. What date was that picture taken and is that a picture of the truck you referred to in your testimony?

A. That is taken the same day, June 29th. That picture shows the truck which is shown in the other picture, traveling towards the junkyard at Washburne and Blue Island.

Mr. Gariepy: Mark this picture No. 68, Mr. Reporter.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 68 for identification.)

Mr. Gariepy: Q. I hand you Exhibit 68. What does that show and when was that taken?

1351 A. That shows the—that was taken on June 29th and shows the Milk Dealers Bottle Exchange truck parked in the loading driveway of the junkyard at Washburne and Blue Island avenue. The truck is loaded in that case with empty crates.

Q. What causes you to say it is a Milk Bottle Exchange truck?

A. The sign is visible on the Ford panel of that truck. It is blurred in that enlargement, but under magnification it shows "Milk Dealers Bottle Exchange." In fact, under close scrutiny it shows that legend.

Mr. Gariepy: Will you mark this Exhibit 69, please?

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 69 for identification.)

Mr. Gariepy: Q. Will you look at Exhibit 69 and tell me what that shows?

A. That shows the office of the junkyard.

Q. At what address?

A. At Washburne and Blue Island avenue, and shows some crates, some of them empty and some of them filled with old milk bottles, at the curb.

Q. And is that the junkyard that you referred to in your testimony?

A. That is right.

1352 Mr. Gariepy: The next one will be No. 70, I believe. Will you mark that, Mr. Reporter.

The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 70 for identification.)

Mr. Gariepy: Q. What does Exhibit 70 show, with regard to your testimony?

A. Exhibit 70 is the last named truck, pulling into the driveway of the Milk Dealers Bottle Exchange. It is another view of the same truck shown in an earlier picture.

Q. Is it loaded with bottles there?

A. It is loaded with bottles.

Q. And where were those bottles obtained?

A. They were obtained at the junkyard at Washburne and Blue Island avenue.

Mr. Gariepy: Will you mark this Exhibit 71?

(The photograph referred to was thereupon marked Plaintiff's Exhibit 71 for identification.)

Mr. Gariepy: Q. I hand you Exhibit 71. What does that picture show?

A. That picture shows the same truck, backed in at the driveway of the junkyard at Blue Island and
1353 Washburne avenue, still with its load of empty crates. There is a sign there.

Mr. Gariepy: And the next one, Mr. Reporter.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 72 for identification.)

Mr. Gariepy: Q. What does Exhibit 72 show and where was that taken, and when was it taken?

A. That shows empty milk bottles in front of the junkyard. I have to refresh my memory as to which yard that is a part of.

Q. You can't remember offhand?

A. I believe it is the yard at 643 North O'Brien street, in the 600 block on O'Brien street.

Q. Does that picture correctly portray conditions just before the bottles were gathered up, as you observed them when the picture was taken?

A. No, correction. Those are close-ups of bottles at the junkyard where we merely observed them being collected from the junk carts.

Q. I see.

A. That was not one of the yards where we observed the bottles being taken away.

Mr. Gariepy: Will you mark the next one, Mr. Reporter, please?

1354 (The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 73 for identification.)

Mr. Gariepy: Q. Exhibit 73, where was that taken and what does it show?

A. That is taken in the laboratory in the Cook County morgue. It shows an empty milk bottle on the laboratory stand, and I am shown in the picture to identify it.

Q. Was there anything set up in there or arranged before this picture was taken, with regard to this bottle being there at the time?

A. No, sir.

Q. It is the way you found it as you came in?

A. Yes.

Q. And your partner took the picture and you were leaning over?

A. Yes.

The Master: Q. You don't know if that bottle was used in that place, do you?

A. No, sir.

Q. For all you know, somebody might have been drinking milk out of it?

A. Yes. It was just there.

Mr. Gariepy: Mr. Reporter, will you mark this with the next number?

(The photograph referred to was thereupon
1355 marked by the reporter Plaintiff's Exhibit 74 for identification.)

Mr. Gariepy: Q. Exhibit 74, does that refresh your memory, with regard to the picker that you mentioned?

A. Yes, sir.

Q. Is that the picker that you mentioned in your testimony?

Mr. Schaefer: That is objected to, if the Master please.

The Master: Let me look at it.

Mr. Schaefer: In the first place, there is no occasion for refreshing the witness' recollection. The witness has not indicated so far that he has been unable to remember anything.

The Master: Cross out about refreshing recollection.

Mr. Gariepy: All right.

Q. Did you see that picture immediately after it was taken?

A. Yes.

Q. Did you see the condition shown in this picture, in regard to a colored man or what purports to be a colored man, with his hands on a bottle, just previous to the time this picture was taken?

A. Y.

Q. Where was it?

A. At the junk shop at 2048 West Lake street.

1356 Q. Does that picture correctly portray the conditions as you saw them just previous to the time the picture was taken?

A. Yes, it does.

Q. Does that show the picker that you referred to in your testimony?

A. No.

Q. What was the date, Mr. Faust, that Exhibit 74 was taken here?

A. May 11, 1939.

Mr. Gariepy: Mark this next one No. 75, please.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 75 for identification.)

Mr. Gariepy: Q. Look at Exhibit 75. Can you tell me when that was taken, and where?

A. It is a close-up of bottles in front of a junk shop, taken on May 11th. I don't recall the address. I have it noted, but I don't recall it.

Q. Have you a memorandum showing the address where this was taken?

A. Yes.

Q. Have you exhausted your memory and recollection with regard to the place where this was taken?

A. Yes.

Q. You may refer to your memorandum, if you have exhausted your memory and recollection.

A. What number is that?

1357 Q. Exhibit 75, I think.

A. That is a close-up of the bottle in front of 2048 West Lake street.

The Master: Q. What is that over there?

A. A junk shop.

Mr. Gariepy: We will have the next one marked No. 76, please.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 76 for identification.)

Mr. Gariepy: Q. Will you look at Exhibit 76 and tell me when and where that was taken and what it shows?

A. That was taken on May 11th.

Q. 1939?

A. 1939. It shows a car, railroad car, filled with rubbish in the I. C. yards, and I am shown in the picture pointing to an empty bottle, which was dislodged from the rubbish in the car and fell to the ground.

Q. Is that the yards that you mentioned in your direct testimony a minute ago?

A. Yes.

Mr. Gariepy: The next one will be No. 77, please. Mark that, please.

(The photograph referred to was thereupon marked

by the reporter Plaintiff's Exhibit 77 for identification.)

1358 Mr. Gariepy: Q. Will you look at Exhibit 77 and tell the Master when and where that was taken?

A. That was taken on May 11th. It shows the owner of the—or the manager of the junkyard in the 600 block on O'Brien street, loading empty milk bottles in a crate, and showing one of the junkyard men—I mean, one of the push cart men, assisting him.

Mr. Gariepy: Mark this next one, please.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 78 for identification.)

Mr. Gariepy: Q. Did you take another picture at the County morgue, other than the one you referred to?

A. I did.

Q. Look at Exhibit No. 78 and tell me where that was taken and when?

A. That was taken in the same room of the county morgue, on May 11th.

Q. What was in the bottle at the time?

A. The bottle was empty. The bottle was taken through the window. It shows we took a picture—rather, showing in the window, as it showed in the hospital, to prove that that was the room in which the picture was taken.

Q. The white building shown in the picture?

1359 A. Yes.

Mr. Gariepy: Mark this next one No. 79, please.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 79 for identification.)

Mr. Gariepy: Q. What does Exhibit 79 show?

A. It shows the push cart man described in the previous answer, putting an empty quart bottle into his gunnysack. That is across the street from the city dump at 19th or, rather, it is an empty quarry that the city is using for a dump at 19th and Lincoln streets.

Q. Is that an empty milk bottle shown in his hand?

A. Yes, sir.

Mr. Gariepy: Mark the next one, please.

(The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibit 80 for identification.)

Mr. Gariepy: Q. What does Exhibit No. 80 show?

A. It shows—it is taken—the background is a yard outside of the Wenzel Dairy on Blue Island avenue. It

shows empty quart milk bottles in crates, in the yard, and I am shown in the picture.

Q. What date was that taken?

A. May 11th.

Mr. Gariepy: The next one is No. 81, I believe. Mark that, please.

1360 (The photograph referred to was thereupon marked by the reporter Plaintiff's Exhibt 81 for identification.)

Mr. Gariepy: Q. Exhibit 81, what does that show and where was it taken?

A. The picture was taken in the yard mentioned at 19th and Lincoln streets, and shows a man picking up an empty pint bottle from rubbish.

Q. Is that a milk bottle?

A. Yes, sir.

Q. And is that the same one that you referred to in your testimony?

A. Yes, sir.

Q. Where a man was picking them up?

A. Yes.

Q. What did he do with this bottle after it was picked up?

A. I didn't stay to find out what he did with it.

Q. Did you have occasion to see a Milk Bottle Exchange truck at any of these dumps that you visited?

A. Not at the dump.

Q. Well, did you see them near the dumps?

A. I did not observe any Milk Exchange trucks near the dumps. I merely saw them at the junkyards.

Mr. Gariepy: Cross-examine.

The Master: We will have a recess now.

(A short recess was here had, after which the proceedings were resumed as follows:)

1361 The Master: Are you ready to go ahead?

Mr. Schaefer: Yes.

Cross-Examination by Mr. Schaefer.

Q. Mr. Faust, what was the occasion for your conducting the survey concerning which you testified, with respect to glass milk bottles?

A. It was more or less a routine assignment.

Q. From whom did the assignment come?

A. From my immediate superior, in our agency.

Q. Who is he?
A. Paul E. Faust.
Q. Paul E. Faust?
A. Yes.
Q. What is the name of your agency?
A. Mitchell Faust.
Q. By whom was your agency paid for making this survey?
A. I don't know.
Q. You made no inquiry?
A. Well, I know it was being made in the interests of Fieldcrest Dairies, but it is not ordinarily known to me who is billed or what the bills are.
Q. I am asking you in this particular instance, and not as to your general knowledge.
A. Yes.
1362 Q. In this particular instance, do you know that the survey was conducted on behalf of Fieldcrest Dairies?
A. That is right.
Q. Do you know what the amount of your bill was?
A. I do not.
Q. Do you know whether or not it has been paid?
A. No, I do not.
Q. Do you know who requested that the survey be made?
A. I merely suppose it was made—
Q. Do you know?
A. I don't know.
Q. With whom did you discuss the making of the survey before you went ahead and made it?
A. Paul E. Faust.
Q. With any one else?
A. That is all.
Q. What were your instructions from Mr. Faust?
A. To go out and find out where used bottles come from, what they are used for, what sometimes they are used for in addition to holding milk, and to take pictures of them where ever that was possible.
The Master: Q. Is that all you were trying to do?
A. That is all my assignment was.
Q. You did not get any information on that subject at the junk yard, did you?
1363 A. The question is—
Q. I say, your assignment was to ascertain, if pos-

sible, for what these milk bottles were used, other than for milk. You apparently did not get any information on those subjects at the junk yards, did you?

A. No, sir.

Q. Nor at the New York Central Yards?

A. No, sir.

Q. I would like to ask this question: you said this was a routine assignment?

A. I mean it was more my capacity—it needs qualification. I am merely a merchandise research man at the agency and it was an appointment for me to go out, it was accepted as a routine assignment.

Q. Your job is to do whatever they tell you to do?

A. Yes.

Q. You never did anything like this before, did you?

A. No, sir.

Q. Nothing routine about it, was there?

A. No.

Q. And it was very extraordinary, in fact?

A. Yes.

Mr. Schaefer: Q. I want to call your attention to the photograph that has been marked plaintiff's exhibit
1364 72 for identification. What happened to those bottles after the picture was taken?

A. I did not stay to see.

Q. Now, with respect to plaintiff's exhibit 73, what happened to the bottles shown in that picture?

A. I don't know.

Q. With respect to plaintiff's exhibit 74, what happened to the bottles there shown?

A. I don't know.

Q. Did you or your associate have any conversation with this man before the picture marked plaintiff's exhibit 74 for identification was taken?

A. Not with that man, but with another man present at the yard.

Q. What was that conversation?

A. Well, the conversation wouldn't cover it. It was a deaf mute. I wrote my questions on a piece of paper and he wrote his answer following it.

Q. But you had no conversation with this man?

A. No, sir.

Q. Before you took his picture?

A. No, sir.

Q. You just walked up and caught him in the act of putting these bottles in a case?

A. Yes, sir.

1365 Q. With respect to plaintiff's exhibit 75, what happened to the milk bottles shown in that photograph?

A. I don't know.

Q. What happened to the bottles shown in plaintiff's exhibit 76?

A. The same answer. I don't know.

Q. The same thing is true with respect to those that are shown in plaintiff's exhibit 77?

A. No, sir, those bottles were—no, we did not see anything more done with that crate.

Q. With respect to the bottles shown in plaintiff's exhibit 78?

A. The same answer.

Q. With respect to the bottles shown in plaintiff's exhibit 79?

A. I merely know that the bottle was put in the gunny sack with the others there, as the outline shows.

Q. There your knowledge ceases?

A. Yes, sir.

Q. With respect to the bottles shown in plaintiff's exhibit 80, do you know where those bottles came from?

A. No, sir.

Q. I think you testified with respect to plaintiff's exhibit 81 that you did not know what happened to that bottle after that?

1366 A. No, sir.

Q. Was there any conversation with him before the photograph was taken?

A. No, sir.

Q. You just happened to walk up and he smiled at the camera for the moment?

A. I would say I don't recall what the conversation was.

Q. There was conversation?

A. Yes, we obtained his name and his address.

Q. Did you ask him to pick up the bottle?

A. I asked him to put his hand down, to recall it exactly as he had picked it up. While we were there I saw him and we asked him to repeat it. That is right.

Q. With respect to the trucks that you followed from various junk yards to the bottle exchange, do you know

what happened to those bottles when they got into the exchange?

A. No, sir?

Q. You testified that you saw a truck going from the milk bottle exchange to the Polonian Dairy. Do you know whether or not on that truck there were any of the bottles that you had theretofore seen?

A. What is the question?

Mr. Schaefer: Read the question.

1367 (Question read by the Reporter.)

A. Heretofore seen, you mean—

The Master: Q. At the junk yards?

A. Before the truck left in the junk yards? No.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. Mr. Faust, he asked you concerning the conversation with a certain party that you said was a deaf and dumb mute, and you wrote down the question and he wrote down the answer. What was the question you wrote and what was the answer you received?

A. I wrote out on the paper "Where do the bottles go?" And the deaf mute wrote down "Milk Bottle Exchange."

Q. With regard to these bottles that you saw picked up at these junk yards or junk shops, did those bottles go to the milk bottle exchange on these trucks shown in the exhibit here?

A. They did.

Mr. Schaefer: That is objected to. The witness has testified what he saw occur.

Mr. Gariepy: We are trying to trace the bottles.

The Master: He says he saw some bottles in a junk yard and he saw some bottles loaded in the junk yard

1368 on to trucks, and then he saw the trucks go to the exchange. That is all he testified.

Mr. Gariepy: That is right.

Mr. Schaefer: Now, he has testified that as to certain pictures shown of junk yards he doesn't know what happened to the bottles thereafter.

The Master: Yes.

Mr. Schaefer: That is my point.

The Master: Well, all right now.

Mr. Gariepy: Q. Did you see these bottles after they

were taken to the milk bottle exchange, did you see them unloaded at the milk bottle exchange, the racks taken off?

A. The first truck there.

Q. The first one?

A. Yes, sir.

Q. Any other one?

A. The second truck, the last one shown, there was congestion in the driveway.

Q. Is that the one shown in the exhibit here?

A. Yes, sir, the last.

The Master: You have gone into this enough.

Mr. Gariepy: Q. Referring to plaintiff's exhibit number 70?

A. Yes.

Mr. Gariepy: That is all, Mr. Faust.

1369 (Witness excused.)

Mr. Gariepy: I offer in evidence plaintiff's exhibits 66 through 82, inclusive.

The Master: They may be received.

Mr. Schaefer: If the Master please, I object to all of them on the ground it has not been shown by the testimony and the exhibits don't show that any of them were ever used for the distribution of milk, and, in the second place, as to a number of the exhibits, specifically, exhibits 72 to 81, both inclusive, it simply shows milk bottles lying in a particular place, no connection at all with the distribution of milk.

The Master: The exhibits may be received. The objection that you make may go to the weight of the evidence, rather than to its admissibility.

(Said photographs so offered and received in evidence were marked "PLAINTIFF'S EXHIBIT NO. 66", consecutively through and including "PLAINTIFF'S EXHIBIT NO. 81" and are attached hereto and made a part hereof.)

Mr. Gariepy: I had expected to have two more witnesses here today. At 9:30 this morning I got a message that the witness could not be here from Detroit, so that I will have to take some additional time. I can present it tomor-

1370 row or some other day this week.

We have these depositions which have not been gone over, unless you want to stop now, as it is about twelve o'clock. We can go into these depositions.

Mr. Schaefer: I don't care to go into the depositions

now. I have never read them. They were taken in New York and Philadelphia. I have not yet read them, but I want to go over them before they are offered in evidence.

(Discussion off the record.)

The Master: Thursday at 10:00 o'clock.

(Whereupon the further hearing in the within cause was continued to 10:00 o'clock, a. m. on September 28, 1939.)

1371 • • Caption) • •

Thursday, September 28, 1939.
10 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, on behalf of plaintiff.
Mr. Schaefer, Mr. Horan, on behalf of defendants.

1372 The Master: Let me say something off the record before you begin with your next witness, Mr. Gariepy.

(Discussion off the record.)

The Master: Are you ready to go ahead now?

Mr. Gariepy: Yes, we are ready. Mr. Huber, be sworn, please.

PHILIP HUBER, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please.
A. Philip Huber.
Q. Your address, Mr. Huber?
A. 1315 Wellesley Drive, Detroit, Michigan.
Q. What is your occupation?
A. President of Ex-Cell-O Corporation.
Q. That is located at Detroit, Michigan?
A. 1200 Oakland Boulevard.
Q. This corporation makes the Ex-Cell-O machine and licenses the Pure-Pak container?
A. That is right.

Q. Now, calling your attention to the month of February, 1938, did you have occasion to come to the city
1373 of Chicago?

A. I did.

Q. Did you have occasion during that month to see Dr. Herman Bundesen, health commissioner of the city of Chicago and member of the Board of Health?

A. I did.

Q. And where was it that you saw him and on what date, during the month of February, 1938?

A. February 10th, in his office.

Q. What day of the week was that, if you remember?

A. Thursday.

Q. What time of the day did you meet Dr. Bundesen in his office?

A. Approximately 11:30.

Q. Did you call and make arrangements, or was it a happenstance matter?

A. No, I had an appointment with Dr. Bundesen.

Q. By telephone?

A. By telephone.

Q. Who was present in his office when you met there at about 11:30?

A. He called in another gentleman who was next door. I presume it was his clerk. I didn't meet the gentleman. And then he called in Mr. Krueger.

Q. Did you have a conversation with him at that time?

A. I had a conversation with Dr. Bundesen per-
1374 taining to a report.

Q. I show you Plaintiff's Exhibit 4 and ask you if you ever saw that exhibit or document before? (Handing document to the witness.)

A. Yes, sir.

Q. Did you have it with you on that date of February 10th that you went to Dr. Bundesen's office?

A. I had it with me.

Q. Did you exhibit the report to Dr. Bundesen at his office?

A. I did.

Q. What did he say to you at that time, and what did you say to him?

Mr. Schaefer: I object to that as immaterial.

The Master: I will let him answer.

Mr. Schaefer: We have here an ordinance of the City

of Chicago which, the City contends, prohibits the use of these containers. Now, what was said by the president of the Board of Health to the witness or any other person can have no bearing on the validity or the invalidity or the construction of that ordinance.

The Master: I will let him answer.

Mr. Gariepy: Q. You may answer, Mr. Huber.

A. I talked to Dr. Bundesen. I wanted to see—

Q. Just tell what you said. Repeat the conversation.

1375 A. I told him I came over here to meet Dr Bundesen and find out what his decision was regarding the report that was made up by Dr. Arnold. He called Mr. Krueger.

Q. Then what next was said?

A. He advised me that I should go with Mr. Krueger and discuss the matter with him, and that was practically the end of the conversation with Dr. Bundesen.

The Master: Q. Who is Mr. Krueger?

A. Who is he?

Q. Yes. What is he?

A. I can't tell you his title.

Q. Is he connected with the Board of Health?

A. Mr. Krueger, I felt, was the right hand bower of Dr. Bundesen, connected with him.

Q. Connected with the Board of Health?

A. Connected with the Board of Health, yes.

Mr. Gariepy: Q. Did you retire to another room with Mr. Krueger or stay in that room?

A. We left and went to Mr. Krueger's office.

Q. Did you have the report, Plaintiff's Exhibit 4 here, with you at that time?

A. I did.

Q. And what did you say to Mr. Krueger when you retired to the next room?

The Master: And who was present at that conversation?

Mr. Gariepy: Q. Who was present?

1376 A. Nobody at the start.

The Master: Q. What is that?

A. There was no one in the office when I went in Mr. Krueger's office.

Q. Just you and Mr. Krueger?

A. Yes.

Mr. Schaefer: Now, if the Master please, I object to

that last question, which was to state the conversation, on the grounds that I covered before, and for the further reason that although you might feel that there might be some justification for admitting the conversation in the case of the president of the Board of Health, certainly that justification cannot exist in the case of an employee of the Board of Health. We are getting pretty far afield as to the action of the city council, which is the governing body of the city.

Now, what I say about that ordinance or what anybody else says about that ordinance has no effect.

The Master: What is the ground for offering that evidence, Mr. Gariepy?

Mr. Gariepy: The purpose of it is to show the attitude of the Board of Health in regard to the application of the plaintiff, which had been on file since January, 1936, for a period of two years, and, further, the purpose of this testi-

mony is to show what effort, if any, the Board of
1377 Health has made to recognize this application and to consider the application, meritorious or otherwise, and why they refused to issue it to the plaintiff, what reason they gave for refusing to issue it to the plaintiff at that time.

Mr. Krueger, the evidence will show, and if it does not, I think we can put on proof here in regard to it, is head of the milk division of the Board of Health.

The Master: Let us assume now that an employee or even the president of the Board of Health gave an incorrect reason, just the same as some lower court might give an incorrect reason for its decision. Now, the upper court would decide the case upon the merits, upon the issues raised, and would disregard any wrong reasons that might have been given by the lower court for a right decision.

Now, what materiality is it—that is the objection made by Mr. Schaefer—that Dr. Bundesen or Mr. Krueger gave some reason which you regard as insufficient?

Let us even go a step further and say that the ordinance prohibits the use of these containers and that members of the Board of Health may have thought that it did not pro-

hibit the use of these containers and for arbitrary
1378 reasons declined to issue a permit, even though they may have thought that the ordinance did permit the use of these containers. You have a case in court and the City takes the position that the ordinance does prohibit

the use of these containers. Would a wrong reason or even a statement by some employee of the Board of Health, to the effect that the ordinance did prohibit the use of these containers, but that the members of the Board of Health had decided arbitrarily to forbid their use, avail you now in this court, where the issue is that the ordinance does or does not permit the use of these containers?

Mr. Gariepy: The answer to that is that these containers are subject to the approval of the Board of Health. We made an application to the Board of Health for the approval of these containers. They have refused to approve this container and have refused to give any reason for refusing to approve this container.

The Master: Do they have to give you any reasons?

Mr. Gariepy: Except through Mr. Krueger, which we are going to show now.

The Master: What I am trying to get at is this: Is not the issue here a simple one, that is, whether the ordinance does prohibit the use of these containers? Now then,
1379 what difference would it make whether the members of the Board of Health or some employee might have had some opinions as to the ultimate question whether the ordinance did or did not prohibit such use?

Mr. Gariepy: When you go into the prohibition or the approval, Master, you must go into the facts concerning the reasonableness of it. You cannot just say approval or disapproval, and the court is going to pass upon it. The court is entitled to know the reasons for failing to give approval for a permit. I think the court ought to be entitled to know that. If Mr. Krueger was delegated by the health commissioner to act and to interview this man and tell him why the permit was not granted, after a period of two years, I think that is material and the Master should know why that was done. The ordinance provides that this is subject to the approval of the Board of Health.

The Master: Mr. Gariepy, we might be interested in a great many things. The point is, are they within the issues and are they material?

Mr. Gariepy: They are within the issue that they, vexatiously and maliciously, failed to approve. That is a question of good faith. Let us see if they have used good faith.

The Master: You are not answering my question,
1380 which is a simple question.

Mr. Gariepy: I will answer it.

The Master: The question I have is this: If the ordinance in terms is broad enough to exclude paper containers, does it make any difference what particular members of the Board of Health or employees of that board might have said or not said?

Mr. Gariepy: The ordinance is not broad enough to exclude them. The ordinance says these containers may be used, subject to the approval of the Board of Health, and it is up to them to approve it.

The Master: Is their approval just arbitrary or are not there some principles and rules set forth in the ordinance?

Mr. Gariepy: The sanitary aspects of the container, the sterility of the container, whether the container is safe from a public health standpoint,—those are the only guides and rules the Board of Health can have. They have it for glass and they cannot have a different standard for the paper. If they satisfy the public health standards and the protection of the public health, what more standards can the Board of Health set up in regard to the Pure-Pak containers? We have here evidence showing the merits
1381 of the containers. There isn't any question as to their use in a vast number of cities and there isn't any question in regard to the sanitary handling of them and manual manipulation. We have gone into that at length in regard to those things.

The Master: Do you have anything more to say, Mr. Schaefer?

Mr. Schaefer: Simply that, as I understand the issues as they are made by the pleadings, the issues are these—and I thought we were clear on them a long time ago—first, is the ordinance properly construed when it requires that milk be delivered in standard milk bottles; does it prohibit the use of this type of container; in other words, is this type of container a standard milk bottle within the meaning of the ordinance? The second issue, as I see it, is whether the ordinance properly construed is reasonably related to the protection of the public health.

Now, our entire case, as made by our answer, rests on that ordinance.

As you said a few moments ago, what any employee of the Board of Health or what the mayor of the city of Chicago thinks is the proper construction of an ordinance is

entirely immaterial here. As a matter of fact, I
1382 want to say this, too: The Board of Health is a body composed of five members. The action of the Board of Health, even if it were material, could not be shown by a statement of some employee of the Board.

The Master: He might be somebody delegated and authorized to speak on behalf of the Board.

Mr. Schaefer: By whom? By the Board?

The Master: Yes.

Mr. Gariepy: The city council would not be expected to act on that.

Mr. Schaefer: Then show the delegation by the Board. There has been no showing of that.

The Master: The president acts on behalf of the Board.

Mr. Schaefer: No, sir. The Board of Health acts for itself.

The Master: It may act for itself, but it may delegate to the president and to employees under his direction the performance of a number of duties.

Mr. Schaefer: There has been no showing here, of course, that there has been any delegation by the Board of Health in the matter of the construction of an ordinance of the city of Chicago.

Mr. Gariepy: It is a matter of construction of the acts of the parties with regard to the approval or disapproval of this container.

1383 The Master: Let me ask, how long is this testimony of yours going to take?

Mr. Gariepy: Five minutes. This man has got to take a plane.

Mr. Schaefer: Further than that, I submit that should not be the consideration. How long will it take us to rebut that testimony?

The Master: I understand that. I will not rule on your objection at this time. Let us hear what the evidence is. He can make an offer. Let us hear the evidence and then I will rule whether to receive it or not.

Mr. Gariepy: Q. I think the last question put to you, Mr. Huber, was what was your conversation with Mr. Krueger when you retired to the next room with him, at the suggestion of Dr. Bundesen?

A. I asked him if he had seen this report.

Q. Referring to Plaintiff's Exhibit 4?

A. That is right. I told him that we had spent con-

siderable time on it, for two years, and I wanted to know whether there was anything that we could do to satisfy the Board of Health.

Q. Go ahead.

A. And he advised me, not that he knew of, that he had not had time to go over this report. He also advised me—

Q. Just tell what he said; not advice, Doctor.

1384 A. He spoke of in regard to some equipment that some other company—

Q. What did he say?

A. (Continuing) wanted to put in a dairy; that it cost them approximately $50,000, between fifty and sixty thousand dollars before they were able to get that into the dairy to use. Right there I told him that our company would not spend any such money as that, if that was the case we would not be interested in spending that amount of money. He mentioned that we did not need to think that Mr. Dean could come in here and steal the market with his paper container, that there were other containers that were not ready.

The Master: Q. That were not what?

A. That were not ready.

Mr. Gariepy: Q. What did you reply to that, if anything?

A. I told him I was not interested in anybody else; I was interested just to see whether we could do anything else for the Board of Health of Chicago.

Q. With regard to what?

A. With regard to our machine or any information that the Board of Health needed, and he told me there was nothing to be done, that he had not had time to go over this report.

1385 Q. And was this with regard to the Pure-Pak container and the request that the Fieldcrest Dairies had for a permit to use it in the city?

A. That is right.

Q. And did you go over there, after talking to Mr. Dean, to find out why this permit was not forthcoming?

A. That is the main reason I came here, the only reason I came here, to see Dr. Bundesen and Mr. Krueger.

Q. Did you see anybody after you told Mr. Krueger or did he tell you to see anybody else about this matter of the use of paper bottles in the city?

A. No, he did not tell me to see anybody else.

Q. What were your last remarks to him and his last remarks to you concerning this visit?

A. That he had not had time to go over this report; he could not tell me when we could get or Mr. Dean could get a permit.

Q. Did you hand him the report?

A. He and I went over it. He looked at it and then I took this back with me.

Q. Were there any comments concerning any additional data that was wanted, or anything?

A. No. I asked him to specify if there was anything else we could do and he advised me no.

1386 Q. Did you ask him whether the man that had been designated to furnish information had complied with any requests or suggestions, or failed to comply?

A. I advised him how much money we spent having our people come over here and work with the Board of Health and following their instructions, and I felt nothing had been accomplished. That was the main reason why I came over here.

Mr. Gariepy: Cross examine.

Mr. Schaefer: Now, I would like to have a ruling before cross-examination, on the admissibility of this testimony. I submit it is completely immaterial. That has been demonstrated now. I don't want to cross examine him on it until we have a ruling.

The Master: I will let it stand.

Mr. Schaefer: You will what?

The Master: I will overrule the objection. I will let it stand.

Cross-Examination by Mr. Schaefer.

Q. Prior to February of 1938 had you ever talked to anyone connected with the Board of Health of the City of Chicago with respect to paper containers?

A. Not in the city of Chicago.

1387 Q. Anywhere else?

A. In Detroit I met Dr. Bundesen—I mean Dr. Arnold. Excuse me.

Q. Dr. Arnold at that time was not connected with the Board of Health in the city of Chicago, was he?

A. Then I have not talked with anybody from the Board of Health. He is the only gentleman I met from Chicago.

Q. Then you did not talk to anybody else prior to that time?

A. No, sir.

Q. Now, in the recounting of your story of your conversation with Mr. Krueger you mentioned that Mr. Krueger had said that the sum of $50,000 was expended in connection with some type of dairy equipment.

A. Yes.

Q. What type was that?

A. He did not specifically tell me what type it was. He just mentioned that figure, of certain equipment that this company wanted to get approved and it took time and cost that much money before they were able to get it approved.

Q. As a matter of fact, don't you know he was talking about short-time high-temperature pasteurization equipment?

A. No, I don't.

Q. Do you know whether or not lengthy experiments were conducted to determine whether or not that type of equipment might be permitted in pasteurizing milk 1388 in the city of Chicago?

A. No, sir.

Q. When Mr. Krueger mentioned the expenditure of the sum of $50,000 or some figure in that vicinity, he was talking about expenditures for experimental work, wasn't he?

A. I figured that then.

Q. That was your understanding?

A. That is right.

Q. You brought the report which is marked Plaintiff's Exhibit 4 to Mr. Krueger, did you not?

A. To Dr. Bundesen's office first.

Q. And then you brought it to Mr. Krueger?

A. He advised us to go and discuss the matter with Mr. Krueger. Dr. Bundesen, I presume, was quite busy.

Q. And you say that prior to the time when you brought the report to Mr. Krueger, Mr. Krueger had not had an opportunity to examine it, is that correct?

A. That is what he told me.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. Mr. Huber, was any machinery, dairy machinery or dairy equipment, mentioned by Mr. Krueger in that conversation with regard to money spent for having the
1389 approval of the Board of Health?

A. Equipment for the dairy, what it was, there was nothing mentioned about that, whether it was a machine or—

Q. High-temperature pasteurization?

A. Or pasteurization or filters or bottling machines. There was nothing mentioned.

Q. No description given?

A. No, sir.

Q. Had you told him previous to that time how much money had been spent by the Ex-Cell-O Corporation concerning the Pure-Pak container, in the matter of experiments and research for manufacturing it?

Mr. Schaefer: That is objected to.

Mr. Gariepy: You asked him about these expenditures.

The Master: I will let him answer.

The Witness: A. You mean for Chicago or the total amount for the machine?

Mr. Gariepy: Q. For the total research for the use of the machine proper.

A. No, I did not. He did not ask me what the company spent.

Q. Did you tell him, not what he asked you?

A. I only told him the figures we had spent in Chicago alone.

Mr. Gariepy: That is all.

1390 The Master: Anything further?

Mr. Schaefer: That is all.

(Witness excused.)

Mr. Gariepy: Mr. Dean, will you take the stand again? There are two questions I want to ask you.

S. E. DEAN, JR., recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. Mr. Dean, in connection with your testimony in behalf of Fieldcrest Dairies concerning the matter of milk supply, I asked you whether or not Fieldcrest Dairies have, since January, 1936, committed themselves to a milk supply, to supply milk for single service containers in the city of Chicago?

A. You mean committed to the farmers?

Q. Right.

A. That is correct.

Q. And for approximately how many pounds of milk?

A. We take the output of approximately 185 farmers at the present time, the production varying from the low months to the high months of from 60,000 to 110,000 pounds per day.

1391 Q. And 60,000 to 110,000 pounds per day means approximately how many quarts?

A. A quart contains 2.15 pounds of milk.

Q. And has the Fieldcrest Dairies at any time since January 13, 1936, had any other means of using that milk or supplying or distributing that milk in the city of Chicago, other than through Pure-Pak containers?

A. No.

Q. Have you been able to use this farmer supply that you committed yourself for, for the last two years or three years?

A. We have been able to use it, but in so doing we took a loss on that milk.

Q. The milk was used?

A. Yes.

Q. How was it used, in what manner?

A. We took it to our condensary plants and canned it, sold it as evaporated milk.

Q. Would you say that there has been a gain or a loss financially by reason of the fact that you used it in the evaporated milk, rather than using it for the sale of fresh fluid milk in the city of Chicago in Pure-Pak containers, during the past two or three years?

A. Milk for evaporating purposes—

Q. Just answer that yes or no. Was there a gain or a profit from doing either?

1392 A. We have had a loss.

Q. Would you say that loss has been better than $10,000?

A. Yes.

Mr. Gariepy: That is all.

Mr. Schaefer: No cross-examination.

Mr. Gariepy: That is all, Mr. Dean. Just a minute. Just one more question.

Q. Is that condition of the use of that milk and that commitment in force today? Is that continuing at the present time?

A. That is right.

The Master: Q. What do you mean by commitment? You just buy the milk from farmers?

A. That is right, but—

Q. You did not commit yourself to the farmers to use single service containers, did you?

A. No.

Q. You just decided you would buy some milk from farmers and you had in mind using single service containers to sell the milk in in Chicago, is that what you mean?

A. Is this on the record?

Q. Yes.

A. Reciting the history of—

Mr. Gariepy: No, no. Just answer the Master's question.

1393 The Master: Q. I don't care for any history. I am just asking you the question, what did you have in mind. You say you committed yourself to farmers to buy milk from them, is that right?

A. That is correct.

Q. Then you had in mind selling that milk in single service containers in Chicago, is that right?

A. That is correct.

Q. Why couldn't you sell it in glass bottles?

A. Because we don't think glass bottles are—

Q. You don't think what?

A. We don't believe that—

Q. I don't care what you believe. Did you sell milk in glass bottles?

Mr. Gariepy: Q. Did you have the facilities to sell milk in glass bottles?

A. No, we didn't.

The Master: Q. Do you sell milk in other places in paper containers?

A. No. Only in the suburbs at the present time.

Q. And your business at the present time consists of selling either in paper containers, if you sell the milk to the public in fluid form, or selling it as evaporated milk, if you do not sell it in fluid form, is that correct?

1394 A. That is correct.

Mr. Gariepy: Q. You do not have any glass bottle equipment, nor are you equipped to sell milk in glass bottles, Mr. Dean?

A. Not in connection with the Fieldcrest Dairies.

Mr. Gariepy: That is all.

The Master: Q. Did you make these purchases of milk from the farmers on the theory that you were going to get a permit for the sale of the milk in paper containers in the city of Chicago?

A. Based on the assurance—

Mr. Gariepy: Answer that yes or no. The Master wants to know yes or no.

The Witness: A. I can't answer certain questions yes or no.

The Master: You can answer that one yes or no. Read the question again, Mr. Reporter.

(The Master's question was read by the reporter as above recorded.)

The Witness: A. Yes.

The Master: Q. Would you have bought the milk or made these commitments for the purchase of milk from the farmers if you were not able to sell in single service containers that milk in the city of Chicago?

A. No.

1395 The Master: That is all.

Mr. Gariepy: That is all, Mr. Dean.

(Witness excused.)

Mr. Gariepy: Mr. Bunta.

ANDREW BUNTA, recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. Your name is Andrew Bunta?
A. Andrew Bunta.
Q. And you were sworn the other day?
A. I was.
Q. And your address?
A. 4750 North Long avenue.
Q. Chicago, Illinois?
A. Right.
Q. Your business is that of a law clerk?
A. That is right.
Q. Calling your attention to yesterday afternoon or yesterday evening, did you have occasion to purchase milk in the city of Chicago at drug stores?
A. I did.
The Master: Now, let us see. Do you mean just drug stores or drug stores where they have soda fountains
1396 and lunch counters?
Mr. Gariepy: I will ask him to describe the stores.
Q. Describe the stores you went to, Mr. Bunta, and purchased milk yesterday afternoon, at 5 o'clock.
A. They were drug stores that had soda fountains—
Q. Name them and give the address of each one.
A. I went to four of them. The first drug store I went to was located in the 33 North LaSalle Building. It was a Liggett's drug store. At that store they sell cigars, luncheons and have a fountain counter, where they sell Coca-Cola and other drinks and lunches.
From there I went to the Liggett's drug store located at about 147 North Clark street, where they have similar arrangements. From there I went to Walgreen's drug store located at 160 North LaSalle, where they again have a similar arrangement.
Q. That is a lunch counter and serving lunches and drinks?
A. Right.
Q. Go ahead.
A. From there I went to the Loop drug store located at

100 North LaSalle, where again they have the same arrangement.

Q. And did you ask for milk to be taken to the office or to be carried out of there?

The Master: Q. Where did you go? To the prescription counter or the fountain?

1397 A. I went to the fountain.

Mr. Gariepy: Q. What did you ask the fountain man?

A. I asked for milk to be taken out.

Q. Did you secure milk to be taken out?

A. I did.

Q. Will you pick out of this pack of containers those that were sold to you and identify them as to each fountain. Take just one at a time. Where was that one secured?

A. That was secured from the Liggett's drug store located in the 33 North LaSalle Building.

Q. Where did you secure the container I am handing to you now?

A. I secured that container from the Loop drug store located at 100 North LaSalle Building.

Q. And this container, where was it secured?

A. That was secured in the Walgreen drug store located in the 160 North LaSalle street building.

Q. And this one?

A. That one was secured in the Liggett's drug store located at 147 North Clark street.

Q. How was the milk served when it was put in there? What did the server do behind the counter?

A. He took a bottle out of the ice box.

The Master: Q. A glass bottle?

1398 A. A glass bottle, and poured it into this container and gave it to me that way.

Mr. Gariepy: Q. And inserted a cap on there with his thumb?

A. Yes, inserted the cap with his thumb, that is right.

The Master: These containers that you have here are just paper glasses, we will call them, or tumblers, with covers inserted in the top.

Mr. Rall: Of about one pint capacity, with a ridge in the top for the insertion of a cardboard or fiber board cap.

The Master: Yes.

Mr. Gariepy: Q. One of them has—which one is this?

A. That was purchased in Liggett's at the 33 North LaSalle Building.

Mr. Gariepy: Q. This one, Master, appears to be paraffined.

The Master: The cover fits over the top instead of fitting into the top.

The Witness: That is right, instead of fitting into a groove.

Mr. Gariepy: The other ones do not appear to have any paraffin coating on the outside of the top.

Mr. Schaefer: That is objected to.

1399 Mr. Gariepy: You can describe them yourself, Mr. Schaefer, then.

The Master: Go ahead. That is all right. I will let that stand.

Mr. Schaefer: I would like to have that statement out of the record.

The Master: All right, let that be stricken. Go ahead.

Mr. Gariepy: Q. Mr. Bunta, I ask you to look at these three containers here and tell me whether you see any paraffin on the top of the cap or on the outside of these containers.

Mr. Schaefer: That is objected to.

Mr. Gariepy: The witness can tell what he sees, Master.

The Master: Objection sustained.

Mr. Gariepy: The witness can surely tell what he sees.

The Master: He is not an expert on paraffin.

Mr. Gariepy: Just look at it. It shows for itself.

The Master: I don't know whether he can tell or not. It may be wax; it may be paraffin; it may be something else. The paper itself may be of such a character that it looks like it is waxed or paraffined. I don't know. I don't know that he is qualified to tell us whether it is paraffin or what it is.

Mr. Gariepy: He can tell what he observes, whether there is any wax or paraffin on it, the same way in 1400 which you can tell.

The Master: I don't know whether we can tell or not. Something scratches off of it. I don't know whether it is paraffin or part of the paper. The paper seems to be a little bit damp and I seem to be able to scratch something off of it.

Mr. Gariepy: I offer these exhibits as our exhibits Nos. 82, 83, 84, and 85.

The Master: I cannot accept those in evidence. We are not going to have a lot of milk here running through the record.

Mr. Gariepy: We will empty the milk out, Master, if that is the objection, and have the containers without the milk. They now appear to contain the milk as served.

Q. They are in the same condition now as when they were delivered to you, Mr. Bunta?

A. That is right.

Q. Except this cap has been taken off?

A. That is right.

Mr. Rall: Make it clear that you are not offering the milk.

The Master: Any objection?

Mr. Schaefer: Yes, I have an objection.

The Master: That is the same objection you made
1401 the other day?

Mr. Schaefer: Yes, and I would like to amplify it by calling attention to the regulation of the Board of Health, which for some reason has not been disclosed, and whi was adopted by the Board of Health on November 12, 1935. It contains "whereases" which I will not read at this time, but the resolution is as follows:

"Be it resolved; that all milk and milk products shall be sold, served or dispensed to the final consumer only in unopened original containers as received from the distributor; and no fractional portion or any part of any original package or container shall be served or dispensed for consumption, except for manufacturing purposes."

Now, if these things are sold, they are sold in violation of that regulation of the Board of Health. The Board of Health cannot obviously be a police officer at all times. Perhaps the city can afford it, but the city sees fit to spend its money for police protection in different ways. This is so obviously immaterial, it seems to me it is foolish to argue it.

The Master: Let me see that regulation. Listening to you as you were reading it I did not quite catch it. I was wondering whether the language was broad enough to
1402 keep a restaurant from opening a bottle and pouring the contents in an ordinary glass.

Mr. Schaefer: Yes, it is. They deliver a bottle of milk to the consumer for the restaurant.

The Master: They cannot serve a glass of milk, then?

Mr. Schaefer: They serve the customer the glass and they give him the bottle.

The Master: According to that, the sale of milk in these

containers that you have here is in violation of the regulations of the Board of Health, is it not?

Mr. Gariepy: What difference does it make, Master? If the city permits a constant violation of the regulations, then the regulations are in law considered null and void. There must be equal protection of law and there must be enforcement of the ordinance, if it is going to have any effect or enforcement whatever. They cannot enforce it in one case, in one kind of a container, and say that the others are being done, but that they cannot police it. It is their duty to enforce such a law, and I doubt whether it would stand up in the case of a drug store. They would have to show a health problem justifying it.

The Master: They do show a health problem.

Mr. Gariepy: What do they do?

The Master: They have a recital here, that
1403 "Whereas the increase in the number of cases of scarlet fever in the city of Chicago is increasing the possibility of milk borne infections and whereas it now becomes urgent and necessary for milk and milk products to be used in the city of Chicago to be dispensed only from unopened containers as received from a distributor, therefore be it resolved—"

Mr. Gariepy: Apparently the cause and purpose and object of passing that resolution has gone out of existence and they are permitting the sale today.

The Master: I will sustain the objection, partly on the grounds stated before. You have not yet shown any notice to the Board of Health authorities of the sale in these packages and it does not appear here just what they have done. It may be they have been enforcing this ordinance all over town and that these people have just begun to violate it. I don't know what they have been doing.

Mr. Gariepy: We will have to bring in the dealers to show they have been doing it for a long period of time.

The Master: You are opening up a field here that I don't quite get the materiality of. There is no contention here that you are going to sell in these particular types of containers.

Mr. Gariepy: No. Much better containers, our
1404 containers.

The Master: Nor that you are going to sell just for lunch counter purposes, which may be drunk either on the premises or just outside of the premises. Manifestly, this type of container is not of the durable and

strong type of container which would be required for the sale of milk to homes or to be taken home. This is just a temporary container to be used for picnic lunch. That is about all it is.

Mr. Rall: The sanitary qualities of the paper, however, seem to me to be exactly the same; the question of whether they have got to go to the mill, for example.

The Master: No. This type of container is for temporary use. If this container were to be used for containing milk for any period of time, there might be a whole lot different problem than you have here now. Apparently these containers are just to be used for, say, twenty minutes or so at the most. They buy the milk and drink right away in these containers. It is a different problem entirely from that presented in the type of container which you have here.

Mr. Gariepy: Which must be sold the next morning as labeled on the lid and as per the ordinance. It must be sold for use on the following day.

The Master: Yes, I know.

1405 Mr. Gariepy: They are all temporary, Master.

The Master: I think you are going far afield. I think you have got sufficient here to show that there are some types of containers used for lunch counter purposes. Let us not get so far afield here that we will have a record that is long and contains so many subjects that have nothing to do with the case that it will just complicate the whole trial. We will never get through with it.

I think it sufficiently appears in the record that you have purchased milk at some of the lunch counters, from drug stores or fountains, in containers such as those described at the present time, and that those lunch counters or drug stores were close to the city hall.

Now, then, I have let that go in for what it was worth, although I expressed some doubt this morning that no notice had been shown to be in the possession of the public health authorities of such sale.

I don't know what you accomplish by simply accumulating that evidence, by the production of some more of these containers. They are sold for a different purpose and are a different type of container. You have enough in

1406 the record on that now. I will sustain the objection to any further proof on that line.

Mr. Gariepy: That is all, Mr. Bunta.

(Witness excused.)

Mr. Gariepy: Mr. King.

BRUCE KING, recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

The Master: You just make an offer of what you want to show by this witness, that he bought some of these—

Mr. Gariepy: The record may show that Mr. Bruce King is on the witness stand and is the man who was here last week. I offer to show by this witness that yesterday afternoon, about 5 p. m., he purchased fresh fluid milk at the following locations in the loop:

Thompson's restaurant at 121 West Madison street, a pint bottle of milk in paper;

The Triangle restaurant—

Mr. Schaefer: I object.

Mr. Gariepy: Wait a minute, Mr. Schaefer, hold yourself a minute, please.

The Master: He is making an offer.

Mr. Schaefer: He says a pint bottle of milk.

1407 Mr. Gariepy: A pint paper bottle, if you want to call it that.

The Master: It is not a bottle. It is a pint paper container in the shape of a tumbler.

Mr. Gariepy: That is the Master's definition, but a bottle may be anything that is used, and that is nothing more than acceding to Mr. Schaefer's argument that it has to be glass.

The Master: You can call it a bottle.

Mr. Gariepy: But it is made out of paper.

The Master: Yes, it is made out of paper, and it is cylindrical, slightly tapering down towards the bottom, and it is like the ordinary glass tumbler.

Mr. Gariepy: Indicating on the outside of said container "Carry-Out Service for Quick Lunch."

The Master: That is it.

Mr. Gariepy: Also that yesterday there was purchased from the Triangle restaurant another half-pint of milk in a paper container, with the name "Triangle" on the outside.

Also from Maurice's restaurant there was purchased yesterday, in a paper container, at the hour of 11:30 a. m.,

some more fluid Grade A milk for drinking purposes,

1408 which is in a container with no indication on the outside, except just a loose tab, with a wire on the

top for inserting it. And that the same purchases at the same stores in the same types of containers were also made on September 26, 1939.

Q. Mr. King, did you have any difficulty in securing the milk to carry out? When you asked the clerk for it, was there any hesitancy in getting the milk?

Mr. Schaefer: That is objected to.

The Master: Sustained. Immaterial.

Mr. Gariepy: All right, that is all, Mr. King.

(Witness excused.)

Mr. Gariepy: Dr. Tonney, will you take the stand, please?

DR. FRED O. TONNEY, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please, Doctor.

A. Dr. Fred O. Tonney.

Q. And your address?

A. 6739 North Greenview avenue, Chicago.

Q. Your business and occupation at this time?

A. Public health consultant, bacteriologist and physician.

1409 Q. Are you duly licensed to practice in the state of Illinois?

A. Since 1909.

Q. How long have you been a bacteriologist?

A. Well, since leaving college. My work began as a bacteriologist.

Q. When was that, Doctor? Leaving college does not mean anything to us, unless we know when you left.

A. About 1909.

Q. Have you ever held any positions with the Board of Health of the City of Chicago?

A. I have, numerous ones.

Q. Name them, and the dates that you held the positions.

A. There have been so many, I think perhaps I better summarize. I entered the Department of Health immediately after leaving the University of Chicago.

The Master: Q. When?

A. And held minor positions from 1909 up to 1923, when I was appointed director of laboratories and research.

Mr. Gariepy: Q. Of the Board of Health?

A. Of the Board of Health.

Q. Of the City of Chicago?

A. Of the City of Chicago. At that time it was called the Department of Health.

Q. Proceed.

A. That position I held until 1931, when I was
1410 appointed assistant commissioner of health, and successively to a number of similar positions with similar duties, with varying titles, up to 1937.

Q. What was your title and office in 1937 with the Board of Health of the City of Chicago?

A. The last title I held was executive officer.

Q. What were your duties as such?

A. Administrative, principally, although a large part of the years they were not essentially different from my immediately preceding duties of my immediately preceding title, which was director of technical service and research.

Q. And as director of service and research of the Board of Health, what were your duties and when did you perform these duties, during what years?

A. Under that exact title, I am not quite sure of the years. I think from 1932 until 1936, if I remember correctly.

Q. What were your duties?

A. The nature of the duties was the administrative responsibility for the dairy division, for the food inspection division, for the bureau of laboratories and for the bureau of sanitary engineering, and also responsibility for research conducted by the department.

Q. Did you at any time, up to the time that you
1411 left the Board of Health of the City of Chicago—which was what date?

A. It was in January of 1937.

Q. Did you up to January, 1937, perform any research work in connection with the paper milk bottle called the Pure-Pak container?

A. No.

Q. On any milk bottle, any quart milk bottle or pint milk bottle, for the sale of milk at retail, did you perform any research work?

A. On glass bottles, yes.
Q. I mean on paper.
A. Not on paper.
Q. What did you do on glass bottles in the bacteriological department? What work did you do there that was considered research or technical work?
A. Of course, in the early days we worked on the bacterial content of bottles, that is, before standards had been developed. I recall one particular type of research on glass bottles, not conducted by me personally, but directed by me and planned by me, on the efficiency of the soaker washer and sterilization type of machine in the dairies.
Q. That is, in dairies using the glass bottle?
A. Yes.
1412 Q. Is that same machine now being used?
A. Those types of machine are still in use.
Q. In the city of Chicago today?
A. Yes.
Q. And in dairies that are permitted to sell milk?
A. Yes.
Q. In the city?
A. Yes, sir.
Q. What other public health experience have you had as a bacteriologist and physician, Doctor, other than that which you have just described?
A. More recently I was medical officer for the Federal Trade Commission in Washington, D. C., assigned to the control of foods and drugs under the new act.
Q. Are you acquainted with the—
The Master: Q. Are you occupying that position now?
A. No. I resigned a short time ago.
Mr. Gariepy: Q. Are you acquainted with the procedures employed by the Board of Health of the City of Chicago, or were you acquainted with them up to the time you left there, concerning the sanitary aspects of the glass milk bottle?
A. Yes, sir.
Q. And what procedures were employed there to ascertain the sanitary aspects or sanitary qualities of a glass milk bottle?
1413 A. Two. One was known as the rinse test of the bottle itself, and then followed by an inspection of the premises by a milk inspector, to determine sources of contamination.

Q. Doctor, in connection with your public health work have you published or edited any articles relating to public health, especially with regard to milk control?

A. Yes

Q. Will you name them?

A. Quite a number of articles.

Q. Name them for the Master.

A. Forty-five to fifty all together on various subjects. Let me see. In the early days, a study of tuberculosis in the Chicago raw milk supply, in which it was demonstrated that at time about ten per cent of the supply was infected with bovine tuberculosis.

Mr. Schaefer: Q. When was that, Doctor?

A. That was in 1910. It was conducted together with the University of Chicago and principally in the laboratories of the Board of Health.

Again in 1927 another survey was made on the same subject, indicating that about three and one-half per cent of the milk at that time was still infected with the organisms of bovine tuberculosis.

1414 Then from time to time various other problems came up. For instance, there is an article on the control of pasteurization, which was developed in the early days, you might say the infancy of pasteurization.

There were a number of articles on laboratory apparatus, field plates, devices for the testing of milk, field bacteriological plates, also a visible dirt test for determining the sanitary quality of milk. Later studies of Vitamin D, the sunshine vitamin, in relation to milk. There was one article which was, I think, along about 1935, on that subject.

Mr. Gariepy: Q. It was a study of yours, was it?

A. A study by me.

Q. An article by you?

A. Entitled "The Pro and Con of Vitamin D Milk."

There were also studies of Vitamin D in Child's Health, having some relation to milk, published in various journals, scientific journals.

That is all I happen to remember now specifically relating to milk. There may have been others.

Q. Did I ask you to give the schools that you were a graduate of?

A. No.

Q. Do so, please.

A. My education was had at the Univeristy of Chicago, Rush Medical College, and Loyola University School
1415 of Medicine, including post graduate work of about ten years, from 1900 to 1910.

Q. Did you know a Dr. White who testified here the other day?

A. Yes, I am acquainted with Dr. White.

Q. Did he ever work with you or was he your subordinate over there while you were there or was he your superior?

A. He was my assistant.

Q. In the bacteriological department?

A. Yes.

Q. Doctor, when did you first hear of this matter of a single service container of Pure-Pak milk bottle?

A. I have been hearing about it for several years in various conventions, public health conventions, particularly the American Public Health Association, which I attend regularly. I have been reading about it in public health literature for some time, I would say four or five years.

Q. When did you first hear about this litigation, the subject matter pending here?

A. A few weeks ago I heard about this particular matter specifically.

Q. And how did you hear about it or know about it?

A. I read a newspaper account of it.

Q. Did you immediately thereafter call me or come in to see me?

A. Yes. I was quite interested in the proposition
1416 and I volunteered my services in this matter.

Q. Have you been promised any remuneration on account of your testimony and appearance here today or at any other time?

A. No.

Q. Have you had any contacts with Fieldcrest Dairies or Mr. Dean in connection with testifying here?

A. No.

Q. Or in connection with any time that you expended in attending any hearings here and hearing the witnesses here?

A. No.

Q. Did you have occasion to go and inspect the Chemung plant of Fieldcrest Dairies at Chemung, Illinois, where the Pure-Pak container is packaged?

A. I did.
Q. And did I make arrangements for you to go there?
A. Yes, sir.
Q. Did you ask me for that?
A. Yes, I requested that.
Q. And did you also go to the Borden plant at River Forest, Illinois, and inspect the paper bottling machine and equipment there?
A. I did.
1417 Q. And when was that, Doctor?
A. One day last week. I think it was the 22nd of September.
Q. Have you had occasion to inspect a dairy plant using and bottling milk in glass bottles and operating under permission of the Board of Health, in the city of Chicago, recently?
A. Yes.
Q. And what dairy was that?
A. That was the Wieland Dairy on West Lawrence avenue.
Q. When did you visit the Wieland Dairy?
A. Yesterday.
Q. What was the purpose of your going to those three dairies, the Chemung plant, the Borden plant and the Wieland plant?
A. I wished to observe personally, and particularly for comparative purposes, the methods of handling the paper and glass containers, and to observe particularly the possibilities of contamination of each, and to bring my knowledge of the subject down to date in regard to both types of containers.
Q. Will you tell the Master what you observed with regard to the sanitary conditions in the Chemung plant at Chemung, Illinois, of Fieldcrest, and also tell him what you observed with regard to the sanitary conditions
1418 prevailing at the bottling of milk in glass bottles at the Wieland plant?
A. I will take them one at a time.
Q. Bearing in mind the public health angle, the protecting of public health.
A. Yes. My entire interest in this is from a public health standpoint.
Q. Proceed.
A. On entering the plant at Chemung, bearing in mind now a comparison with the usual glass bottle plant, my

first impression is the superior appearance of the plant, I mean from the standpoint of general sanitation. That is, the plant is not sloppy; that is to say, there is no water being sloshed around. It does not splash on your clothes or on your feet. There are no hoses that are spraying the apparatus constantly. It is a dry and clean process, and in a sanitary and light room.

Then I studied the method of filling the paper containers or bottles, with special reference to the time consumed between the opening of a package of paper containers from the factory and the final filling with milk, and sealing it. That process is exceptionally short, compared to the washing and sterilizing and filling of glass bottles.

In that process there is only one point of contact
1419 that is of any significance between employees and the paper container. That is the point at which the case of flat paper containers is opened in the filling room by a white gowned employee, with his sleeves rolled up, and in which packs, four to six inches high, of the flat paper are produced on the shelf in the machine, which automatically feeds them into the machine. That, as I say, is the only point of contact, human contact, by employees of the plant with the dry paper.

Then the machine, grasping each part, passes it into an opening device, in which the carton is opened by rubber vacuum discs, and passes it on into another section, which seals the bottom on with glue at a high temperature, and then passes it on to a paraffin bath, in this case at a temperature of 172 for 19 seconds, and then from the paraffin bath on to a cooling device for about 18 seconds; then to a crimping machine, which just crimps the top so that it will fold; then to the filler, two devices, one on each side, filling a half pint at a time simultaneously. Then the bottle passed on to a closing machine and was sealed by wire brads at a high temperature, hot, and was passed out sealed to the man, who merely packed the bottles up and put them into containers.

My impressions from a sanitary standpoint were,
1420 that is, in comparison with the ordinary bottle washing and filling process, that there was far less opportunity for contamination of the paper container along the route from the carton as received from the factory to the filling point.

There is also a protected pouring device—

Mr. Schaefer: I didn't get the last sentence. Excuse me.

(The record was read as above recorded.)

The Witness: A. (Continuing.) There is also a protected pouring device on the side of the top. This is a sort of gable roof top.

The Master: Q. Of the container?

A. Of the container, which completely covers and protects the pouring lip all through the process, even at the point where the employee takes out the folded carton. The pouring lip is protected, sealed, that is, for a distance of perhaps a half-inch around the opening. That remains sealed throughout the process and is still sealed when the bottle is filled and packed.

Q. The bottle is closed up after the milk is put into it, is it not?

A. It is not put in through the pouring lip. It is put in through the top of the bottle and then the top of the bottle is crimped into a gable roofed sort of top and
1421 sealed, but all this time the pouring lip to the consumer who gets the milk is protected from human hands or other contacts.

Mr. Gariepy: Q. Have you any opinion as to whether this gable top, as you call it, wired and sealed, is tamper-proof?

A. Yes, I think it would be. It is sealed and intended to be sealed until the bottle is opened by the consumer.

Q. Proceed.

A. Now, speaking of the Borden plant, the procedure is slightly different, although not essentially. One has the same impression of a very clean, sanitary plant, free from the splashing and jets of steam and so forth that are prevalent in the ordinary bottle filling plant.

Q. What about the number of employees employed in that procedure?

A. There were four at Pure-Pak and I think four at Borden.

Q. Proceed.

A. They were all dressed in white garments, with sleeves rolled up, and they had every appearance of being cleanly.

The Master: Q. Where was the Borden plant located?

A. In River Forest. I don't just recall the address.

Mr. Gariepy: Q. It is near the "El" station there, is it not?

A. It is near the elevated station, on Circle avenue.

1422 There is a difference, however, in the system of handling the Borden bottle, in that it comes completely made from the factory. It comes in large cartons. They are all completely made and not in flat sections, as in the case of the Pure-Pak. These large cartons are brought into the filling room by an attendant, or they may come in through a chute, and are opened immediately before the process starts, and are filled in sections, perhaps that high (indicating), about a dozen cartons.

The Master: Q. Indicating a distance of about three feet?

A. What is that?

Q. Indicating a distance of about three feet high?

A. Yes, about three feet high, which are fed into the receiving portion of the machine. Then the process from that point on is again automatic. It proceeds without contact with human hands, to the completely filled container.

Mr. Gariepy: Q. Did you have occasion to observe the place where the blanks are stored at the Chemung plant of the plaintiff, before they are used in the machine?

A. I did.

Q. And what kind of a room is that?

A. They are stored in a large light room, at a temperature between 90 and 100, I believe, to keep the paper dry, to prevent it from absorbing moisture.

1423 Q. Did you have occasion to observe where the paraffin was stored before it was fed into the machine and used?

A. I did not see where the paraffin was stored. I saw it before it was poured into the machine. It was melted: ordinary block paraffin. It was in the process of being melted in a small tank and then going into a larger tank for the purpose of dipping. In the Borden plant the cartons are already paraffined when they arrive. There is no paraffining in that plant.

Q. What did you observe at the Wieland plant?

A. The usual process of bottling by the soaker washer method. The bottles are washed in one room and the filling occurs in the next room.

The Master: Q. What are they washed with?

A. They go into a large tank known as a soaker tank, containing an alkaline solution. That is one of the things we studied in our original research, that is, the concentra-

tion necessary and the heat necessary to sterilize these glass bottles.

In this process, however, the soaker solution is kept at two per cent alkali, that is, in terms of sodium hydroxide. The alkali is added to from time to time to keep that concentration up to two per cent. Perhaps it runs, and
1424 often does, as high as six per cent, and perhaps once a month the accumulation of sludge is cleaned out of the tank.

The bottles go in in great conveyors. Of course, they are stacked by hand onto the conveyor, and then they are dropped onto another conveyor, which conveys them down to the tank. They are in there about fifteen minutes, at a temperature of at least 120. The action of the alkali—it is a caustic—is to dissolve the dirt, dried milk solids and the bacteria to a certain extent.

After that process the bottles go through a rinse, and then finally through a chlorine rinse. That is a solution of water containing a chlorine derivative having an available chlorine content of fifty parts per million or more. That, of course, is a second sterilizing process.

Then the bottles coming from the chlorine rinse receive a plain water rinse, and then go on a long endless chain, which is perhaps thirty-five to forty feet long, through a door to the next room, where the filling occurs.

Q. Up to that time or up to that point would you say the bottles are sterile or essentially sterile?

A. I think they are. Probably not completely sterile.

Q. I say essentially sterile.

1425 A. It would depend on the concentration—I know that they are not always sterile.

Q. What is that?

A. I know that many of them are not completely sterile.

Q. I didn't say completely sterile. I said essentially sterile.

1426 The Witness: Well, I think if the apparatus is conducted properly, if the strength of the solutions are kept at proportion, if the temperature is kept at proportion, if the chlorine content of the rinse is kept at the proper proportion, then they are essentially sterile from a practical standpoint so far as spreading disease is concerned. The danger, of course, is that one or more of those steps may not always be carried out.

The Master: Q. From your experience in the public

health department, you found that conditions are usually such as to result in practical sterility, did you not?

A. Usually, yes, not always. We were constantly testing that and constantly having to go out and find what was the matter.

Q. That is the inspection service for the purpose of keeping conditions the way they ought to be?

A. That is right, sir.

Q. That inspection service, in your opinion, has been well maintained?

A. I think it has been reasonably well maintained.

Mr. Gariepy: Q. How often do they inspect, if you know, Doctor.

A. I think that is quite variable. When I was in charge of that work we constantly had samples brought in to
1427 the laboratory, and when we got results indicating that something was wrong, the Dairy Division would be advised of it and they would send out an inspector to locate the difficulty, and then we would have a flood of samples from that particular plant, we would have them daily for a week, perhaps, but, I would say ordinarily we tried to get around about once a month on the average.

The bottles after they are rinsed go into this endless chain, this long endless chain, into the next room and then there is one point there that I think is the weakness from a sanitary point, that these bottles are in the open air and they are subject to picking up by employes, and they are subject to picking up when they want to clean out the line and put in a different size, for instance, they are open to flies and it is very difficult to keep all flies out of a dairy establishment, there is so much food around, and they run around this plant and sometimes during the process they remain there in the open for quite a while.

Then they enter into a circular filling machine which fills the bottles and passes them on to another circular capping machine adjoining.

They come out of the capping machine and then
1428 are picked up by hand by one or two attendants, by the tops. Of course, the glass bottle, one of the weaknesses is that you pick it up by the top, right over the pouring lip.

Q. That is after the cap is in?

A. After it is filled and capped. These are the flat top caps. There are two different types of caps, but in this

case they were the flat top caps that are used for cream bottles of all sizes, they were picked up like this (indicating) and put into a handle—

Q. Over the top?

A. Yes.

Mr. Gariepy: Q. Like the cap shown in this half pint of Grade A Cream, did you purchase that in the City of Chicago?

A. Yes, I did.

Q. Yesterday?

A. Yesterday.

Q. At my request?

A. Yes, sir.

Q. With this cap that you are describing to the Master?

A. Yes, and that is the type of cap that is used generally for cream bottles, after filling cream bottles; there is no hood over it, it is sold this way and the handling is naturally by the top, and, of course the finger contaminations get on the pouring lip which is entirely unprotected.

1429

The Master: Q. Entirely what?

A. Entirely unprotected.

Mr. Gariepy: Q. Did you purchase, at my request, a half pint of grade A Cream from the Meadowmoor Dairies, put up by them, at some store?

A. Yes, sir, near my home.

Q. In Chicago?

A. The Borden-Wieland bottle of cream was purchased from the Atlantic & Pacific Store at 1438 Morse Avenue, Chicago, and the Meadowmoor bottle of cream also in a flat top cap was purchased from Waddell's Milk Depot, 1509 Morse Avenue in Chicago.

Q. Did you also purchase a quart of milk put up by the Meadowmoor Dairies, Grade A Milk, in the store yesterday?

A. At the same place, yes, Waddell's Milk Depot. I purchased that for the reason, in order to show the beginning of an effort, at least, to protect the pouring lip of these bottles. This is somewhat protected, at least it covers the top portion of the lip. This is not a complete protection. The finger is kept here and the milk drops down over the pouring lip.

1430

The Master: Q. You say "here". By "here" you mean the fingers get on the portion of the glass milk under the paper hood?

A. The paper hood which only comes down about a quarter inch from the top, this there (indicating). Of course, there is a hood type. This is not a hood type, but there is a hood type that comes down an inch to an inch and a half, a second cap that is used on some containers, however it is not universally used. It is used on quart bottles, I believe, when delivered to home, but not to stores —that is not to many stores, at least.

Q. In the hood type there are two covers, are there not?

A. There are two covers, yes.

Q. There is first a disc cover in the top of the bottle and then over that is the hood?

A. Over that is the hood.

Q. In this sample that you have here, in the quart bottle with the hood going down about a quarter inch over the side, is there also a disc?

A. That is a single cap, just a depressed top.

Q. A single cover?

1431 A. A single cover, yes. It is not really a hood type. It gives some protection but not full protection of the pouring lip.

Mr. Gariepy: Q. You gave your opinion, Doctor, as a public health expert, with regard to the merits of the Pure-Pak Container, as you observed it packaged and filled, as compared with the glass bottle as you saw it washed and filled at the Wieland Dairy in the last few days?

A. Yes.

Q. From a public health standpoint?

A. Yes.

Q. What is your opinion?

A. That the Pure-Pak Container represents a distinct advance in the sanitary sale of milk and a safeguard against the spread of disease by milk containers and by milk.

Q. What are your reasons for that opinion, Doctor?

A. The fact that it is so much better protected along the line from the empty container to the filled container and that it is not subject to contamination by employes, to anything like the same extent, and that it is not subject to contamination by flies. Furthermore, that the process is shorter, there is less exposure.

Q. The process of time is shorter?

1432 A. The time element is much shorter, a minute to two minutes exposure sometimes compared to half an

hour or sometimes even twenty-four hours of exposure of bottles, where the run has been finished and the bottles are left there and they are left open until the next run.

Q. Does the origin of the glass bottle, from re-use to use, and from re-use to use again, enter into it, in your opinion?

The Master: Read the question.

(Question read by the Reporter.)

Mr. Gariepy: Q. In other words, you find a bottle of milk as you buy it and you use it and bring the bottle back to the store, and you may get the bottle back after two or three days, or your neighbor may get it. Does that factor enter into your opinion in regard to the merits of the ordinary container?

A. Yes, it does.

Q. In what respect and how?

A. In that bottles are returned from cases of contagion. On that point, although there is a law requiring that bottles be held during the case of a quarantine, the weak point is that the diagnosis is practically never established at once of these communicable diseases such as measles, 1433 scarlet fever, aseptic sore throat, and in many instances these diseases are much more communicable in the first days, the first few days, than they are later in the course of the disease. Under the ordinance, the ordinance can't work until there is a report of the contagion.

Q. That is the ordinance of the City of Chicago you refer to?

A. That is the ordinance of the City of Chicago, when that report is received at the Health Department, it is promptly transmitted to the milk dealer and he immediately discontinues carrying bottles back from that home; but the first few days, in many cases, is the most infectious period of the disease that is not covered, and bottles go back to the plant and are put into use again, they are handled by employes and the employes themselves may be subject to infection in that way, and then if the alkali concentration of the washer is not long or the chlorine is not up to standard for the time being there is that danger, which does not exist in the paper container.

Q. Did you have any experience when you were at the Board of Health with regard to tracing disease from glass bottles or to glass bottles and to the distributor or handler, milk man?

1434 A. Yes, that work came under my general direction.

Q. Can you recall one instance?

A. Yes, I do. I know there were a number of instances, but I recall one particularly in which a typhoid outbreak was traced to a milk wagon driver who proved to be a typhoid carrier. This was a definite instance of contamination of the pouring lip. In the end we decided that a rag which he used to wipe the bottles to make them look nice and shiny and clean was the particular source of transfer of typhoid organisms from his fingers, after he had been to stool, on to the pouring lip of the bottle; then the consumer opened the bottle and poured out over the lip, the organisms got into the milk in that way. That was a very interesting case that I know of from my own experience. However, there have been many such cases on record. I had occasion to look up the literature on that last week, I found some forty-five instances in the literature of similar instances.

Q. Have you an opinion as to whether that is possible in the matter of the use of the Pure-Pak Container?

A. I should consider it impossible, considering the protection of the pouring lip of the Pure-Pak Container.

Q. Do you know of any instance where the use of the Pure-Pak Container, the paper milk bottle in the
1435 case here has been the source or the means of spreading disease?

A. No. I have made inquiries, I have looked up literature in the libraries, I have been able to find no such instance.

The Master: Q. Of what?

A. Of a disease traceable to a paper container, single service paper container.

Q. You said something about wiping the pouring lip of the glass bottles?

A. Yes.

Q. Wouldn't there also be a necessity of wiping the pouring lip of the paper container?

A. I don't know why, and, besides, it is protected, it is covered for at least a half inch around.

Q. Doesn't it also get wet?

A. Those that I have seen have always been dry.

Q. The glass milk bottle is kept by the driver of the milk wagon in a box containing ice?

A. Yes, cracked ice.

Q. Isn't the paper container also kept in cracked ice?

A. Those I have seen have not been covered with cracked ice.

Q. How are they kept without cooling?

1436 A. I don't know whether they use dry ice or not, but they pack them and cover them; whereas, in the bottling plant they put the shovel full of cracked ice over the case just as soon as it leaves the bottling apparatus.

Q. That is in the case of glass bottles, you mean?

A. But in the case of paper containers, they are put in a paper carton about that size and covered and put away in the cold storage room. I haven't seen them finally delivered to a consumer, but I should think the logical way to do it would be in a wagon with dry ice.

Q. You don't know how it is done?

A. I have seen that particular angle. For instance, these that I purchased yesterday were in a separate ice box and there was no ice around the bottles at all.

The Master: Well, go ahead.

Mr. Gariepy: Q. As a bacteriologist and public health expert, Doctor, do you consider the standard rinse test of the American Public Health Association for milk containers equally applicable to glass containers as to paper containers?

A. Yes, I do from a sanitary standpoint and a public health standpoint.

Q. From your observation of the two containers

1437 in the two milk plants and your knowledge of the tests that are usually and customarily applied, as suggested by the American Public Health Association for testing milk containers, do you see any logical reason why public health officials should first visit the mill before they allow paper containers to be used when made from board that comes from that mill?

A. My feeling as to that is that it would be an unnecessary refinement.

Q. Why?

A. Although it might be done.

Q. Why?

A. Just because public health funds are not so ample, and much better results could be obtained by expenditure of public funds in other ways, for public health, than on something that is really not necessary.

The Master: He didn't ask you that. He asked why isn't it necessary.

Mr. Gariepy: Q. Why isn't it necessary to go to the mills?

A. Because of the triple sterilizing process through which the paper goes and the continued reduction of bacteria by drying on the paper and because the condition of the paper can be determined by a simple test, near
1438 the place where it is used. I refer to the rinse test or to the disintegration test.

Q. Do you consider the disintegration test on paper a more severe test than a rinse test that has been employed for years, as you know it, in the Board of Health in the City of Chicago, in order to ascertain the sanitary quality of the container?

A. Yes, decidedly more severe, in that the rinse test alone does not get all of the bacteria off of the bottle; you can rinse two or three times and still continue to get bacteria from the bottle; it is only a relative thing; whereas, the disintegration test brings out all of the bacteria present both on the surface and in the fiber of the paper, including those that are buried in the paraffin and rendered harmless by that method.

Q. Up to the time you left the Board of Health, Doctor, had disintegration tests been performed on any paper containers used in the City of Chicago for oysters, cheese or any liquids permitted sold?

A. No, they had not.

Q. What tests were performed by the Board of Health to ascertain the sanitary quality of paper containers permitted used in the City of Chicago, that you know of?

Mr. Schaefer: If the Master please, we have cov-
1439 ered that by stipulation.

Mr. Gariepy: All right.

Q. Did you, Doctor, or anybody under your supervision or under your control, ever go to a paper mill or to a mill that makes any of these paper containers that were permitted use in the City of Chicago, to inspect such mill?

A. No.

Q. Or to inspect the methods and procedures employed at the mill for making the paper board?

A. No.

Q. Do you know of any one connected with the City of

Chicago, especially the Board of Health thereof, that ever did go to make such inspection at the mills or of the methods employed in making the paper used in these containers?

A. I don't. I have never heard of anybody going.

Q. Doctor, have you an opinion as to whether or not the bacteriological and sanitary hazard involved in the Pure-Pak Container, as you observed at the Chemung Plant being bottled, and the paper containers that were exhibited here this morning as having been purchased with milk in it from stores and restaurants, whether they differ any?

The Master: Read that question.

1440 (Question read by the Reporter.)

Mr. Gariepy: With regard to the bacteriological and sanitary hazard involved in either of them; do they differ any?

The Master: Now, read it all over again, and this last part, also.

(Question read by the Reporter.)

Mr. Gariepy: Q. Do you understand the question?

A. I think so.

Mr. Schaefer: Q. Did you say you had an opinion?

A. Yes.

Mr. Gariepy: Q. You may give it.

Mr. Schaefer: If the Master please, I object to that, again. We are back to the question of the containers and the use, which is prohibited.

The Master: I sustain the objection.

Mr. Gariepy: Q. Doctor, do you see any reason why, from a public health standpoint, it would be necessary for a public health official to visit mills that make paper board used in paper containers that are used for oysters and other liquids that are permitted use and sale of products in the city, such as ice cream, also?

A. I see no necessity in either case.

Q. Do you know that paper containers are used for the sale of ice cream?

1441 A. Yes.

Q. Did you at any time when you were connected with the Board of Health or in all of your experience, with regard to anybody making inquiry at mills concerning methods employed in making that paper board used in those paper containers for the sale of ice cream?

A. No, I did not.

Q. Did you perform any tests on those containers used for ice cream sales?

A. Some tests were made in the early days, particularly in connection with the counter freezers which are filled directly from the freezers in drug stores, to paper containers. Even those were merely the rinse tests for bacteria.

Q. Doctor, have you any interest in this lawsuit?

A. Interest?

Q. Yes.

A. No.

Q. Pecuniary, or otherwise?

A. No, except that I have an interest in public health. That is my career.

Mr. Gariepy: You may cross-examine.

Mr. Schaefer: I sguggest that we adjourn now. It is twelve o'clock.

1442 The Master: We could proceed for thirty minutes.

Mr. Schaefer: I would rather not start cross-examination now. I feel that I could save time if we could recess now.

(Discussion off the record.)

The Master: Do you want to resume at 1:30?

Mr. Schaefer: That will be satisfactory.

The Master: We will resume at 1:45.

Mr. Schaefer: I think that would be better and it would save a lot of time.

(Whereupon the further hearing in the above entitled cause was continued until 1:45 o'clock, p. m. on the same day, September 28, 1939.)

1443 • • (Caption) • •

Thursday, September 28, 1939,
1:45 o'clock p. m.

Met, pursuant to recess.

Present:

Mr. Gariepy, Mr. Rall, on behalf of plaintiff.
Mr. Schaefer, Mr. Horan, on behalf of defendants.

1444 The Master: You may proceed.
Mr. Gariepy: Take the stand, Doctor.

DR. FRED O. TONNEY, a witness called on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination (Continued) by Mr. Gariepy.

Q. Before you were excused this morning on direct examination, Doctor, I forgot to ask you two or three questions. Are you acquainted with the inspection performed by the Board of Health of the City of Chicago with regard to food establishments and drug stores selling food, as to the manner of the inspection, whether they inspect materials used in equipment?

Mr. Schaefer: That is objected to as immaterial to the issues here.

The Master: Food establishments?

Mr. Gariepy: Yes, sir. Restaurants, drug stores, dispensing food in the city.

The Master: I will sustain the objection. I don't see any materiality to that.

Mr. Gariepy: I offer to prove by this witness that he is familiar with that type of inspection, and that on such inspection performed by the Board of Health in restau-
1445 rants, hotels, and drug stores serving food and liquids the inspector has occasion to notice and observe the type of receptacles used for the sale of food products, milk and other liquids, so that the city would have every reason to know and to exercise reasonable care as to the type of container used, whether glass, paper, or otherwise, and to object to them.

The Master: Q. How long since you have been with the Board of Health?

A. Since January, 1937.

Q. You have not kept up with the inspection requirements of the city during that time, have you?

A. Since that time?

Q. Yes. Various details.

A. No, not in detail.

The Master: I sustain the objection.

Mr. Gariepy: Q. Doctor, I ask you, from a public health standpoint, whether you have an opinion in regard to whether or not any health hazard is presented in the matter of permitting the sale of ice cream in paper containers, oysters and cheese and other liquids, different than the health hazards, if any, existing in the sale of milk in a Pure-Pak container?

A. Yes.

Q. What is your opinion?

A. The hazard in both cases is not great, but that the hazard is less in the case of the Pure-Pak container,
1446 because of the manner in which it is handled, and because of the fewer people who handle it, and because of the short time for which it is exposed.

Q. Have you seen and are you acquainted with the type of containers being used in the city of Chicago for the sale of oysters, food and liquid drinks?

A. Yes.

Q. Do you know whether or not the Department of Health or the Board of Health of the City of Chicago or any employees or inspectors thereof ever inspect the glass plants that make glass milk bottles, for instance, the Owen-Illinois Glass manufacturing plant?

A. No such inspections were made when I was attached to the Health Department, and, so far as I know, not since, either. I see no occasion for it.

Mr. Gariepy: That is all, Master.

If the Master please, I call Mr. Schaefer's attention to a matter in the pleadings where I think there is an inadvertence, which I think we can correct by stipulation, which he and I have agreed to, and which I think should be as follows:

That the plaintiff, Fielderest Dairies, Inc., now holds and possesses Permit No. 1521 from the Board of Health of
1447 the City of Chicago, permitting it to sell milk at wholesale from its Chemung plant in the city of Chicago.

Is that correct?

Mr. Schaefer: If you will insert the word "unpasteurized."

Mr. Gariepy: Unpasteurized milk.

Mr. Schaefer: At wholesale.

Mr. Gariepy: At wholesale, in the city of Chicago.

The Master: I should think, however, that you should have a formal amendment to be filed in the Clerk's files, because I don't think you can amend pleadings simply by stating it in the transcript before the Master.

Mr. Schaefer: Off the record.

(Discussion off the record.)

The Master: Let the foregoing be entered as a stipulation of fact in this case.

Do you want to cross-examine now, Mr. Schaefer?

Mr. Schaefer: Yes.

The Master: Go ahead.

Cross-Examination by Mr. Schaefer.

Q. What is your present employment, Doctor?

A. I am a public health consultant and practicing physician.

Q. For whom are you a public health consultant?

A. Myself.

1448 Q. What is that?

A. Myself.

Q. Will you explain what you mean by that, Doctor?

A. I mean that I consult upon various public health problems.

Q. You mean, you consult with yourself?

A. No, I am employed by myself. I consult with whoever wishes to consult me.

The Master: Q. Who has consulted you since you became a public health consultant? How long have you been a public health consultant?

A. Since leaving the Health Department. I immediately opened an office for that purpose.

Q. From 1937?

A. Yes.

Q. Have you had any people who consulted you?

A. The latest one, since returning from Washington, was the Federal Trade Commission of the United States in connection with a litigation which occurred in Chicago re-

cently. Prior to that I have had other duties in various types of work, such as reorganizing a public health laboratory, for instance, consulting with civic clubs on public health matters, consulting with individuals, correspondence in connection with committees of various associations. That is about the picture.

Mr. Schaefer: Q. You mean they employ you, these civic associations?

1449 A. They have, yes. For instance, the City Club of Chicago?

Q. You have been doing that since January of 1927?

Mr. Gariepy: 1937.

Mr. Schaefer: Q. 1937. I beg your pardon.

A. Yes, in connection with the private practice of medicine.

Q. When you were employed by the Federal Trade Commission, was that as a full time employee?

A. Yes.

Q. Then you did not do any outside work, such as public health consultant?

A. No. I was in Washington, D. C.

Q. That was full time employment?

A. Yes.

Q. How long did that last?

A. That interrupted my work as consultant.

Q. How long did that last?

A. Something like six months.

Q. I understood you to say on your direct examination that you made a survey of the incidence of bovine tuberculosis in cattle supplying milk to the Chicago area in 1927, is that correct?

A. I made two such surveys, the first in 1910 and the second, I think, in 1927 or 1926.

Q. In the 1927 survey my recollection is that you

1450 found three and one-half per cent of the cattle infected.

A. The raw milk supply.

Q. The raw milk supply?

A. The unpasteurized milk supply.

Q. Not of the cattle?

A. Not of the cattle. That was the milk. It came in on a percentage basis.

Q. Was there a compulsory tuberculosis examination of cattle in 1927?

A. Yes, it was made compulsory, I think, finally, about a year before that. There was quite a battle going on at that time to obtain that sort of control.

Q. You have not made any survey since 1927?

A. I have not made any survey since 1927, no. Of course, since that time there is complete control of bovine tuberculosis in Illinois. It being complete, there is hardly any occasion for it now.

Q. So that by now the three and a half per cent of supply contaminated does not exist?

A. We would not expect to find any at present.

Q. How many paper mills that manufacture paper for paper milk containers have you visited, Doctor?

A. None.

Q. At no time did you ever visit any paper mill manufacturing paper board?

A. No.

1451 Q. For milk containers?

A. No.

Q. Do you know anything, of your own knowledge, with respect to sanitary conditions in mills manufacturing paper board for use in paper milk containers?

A. No. I don't know just what you mean by sanitary conditions.

The Master: Q. Do you know anything of your own knowledge?

A. I have not inspected them myself. I have entered into discussions, read the literature on the matter, I have been interested in the matter, but I have not inspected the plants.

Q. Did you visit them?

A. No.

Mr. Gariépy: Q. Did you visit them? Answer that question.

A. No, I did not.

Q. You didn't go there yourself?

A. No, I did not.

Mr. Schaefer: Q. Do you have an opinion, Doctor, as to whether or not the sanitary conditions in a mill which manufactures paper board for use in paper milk containers are of any public health significance?

A. I have, from general knowledge.

Q. What is that opinion?

A. The opinion is that considering the numerous proc-

esses of sterilization which the paper goes through,
1452 that there is no significant public health problem from that point.

The Master: Q. I don't understand that answer. You say considering the sterilization processes that the paper goes through.

A. Yes.

Q. Where?

A. In the plant.

Q. In what plant?

A. In the first place, from general chemical knowledge I know just about what the process is in the paper plant. The first is the dissolving of the wood pulp by a strong alkalye and sulphur solution, which in itself destroys the germs.

Mr. Schaefer: Q. Doctor, you are answering my questions, you understand that, now?

A. Yes.

Q. Did you ever see pulp manufactured in a paper mill?

A. Not outside of a laboratory.

Q. The answer is no?

A. No, not in the manufactury, no.

Q. Did you ever see any sterilization effected in any paper?

A. From personal observation, no.

Q. Have you ever seen any sterilization of paper in any paper mill?

A. From personal observation, no.

Q. Are you aware that sanitary conditions in paper mills vary from mill to mill?

1453 A. I should think they would.

Q. Are you aware that they vary from day to day in the same mill?

A. I should think they would, to a certain extent.

Q. And from hour to hour?

A. Possibly. I should expect them to vary in a minor degree.

Q. Have you ever visited any plant in which the paper used in the manufacture of paper milk containers was cut, scored and printed?

A. No.

Q. Do you have an opinion as to whether or not sanitary conditions in such a plant are of any public health significance?

A. From general knowledge, I have.

Q. And that opinion, of course, is that they are of no public health significance?

A. No.

Mr. Gariepy: I object to that. He did not say that at all and I object to the form of Mr. Schaefer's question.

The Master: He is cross-examining.

Mr. Gariepy: I know, but he should ask him what his opinion is.

The Master: Overruled. What is your answer?

The Witness: A. I should say there is no essential public health problem.

1454 Mr. Schaefer: Q. What is your answer to the question that I asked you?

A. That there is no essential public health problem, no problem which is sufficient to require health officers at the point of using the paper product to inspect such plants.

Q. What is the operation in those plants?

A. Cutting, pasting, folding, printing of the paper sheets.

Q. Which comes first?

A. I presume they would vary in the plants.

Q. You don't know?

A. I would expect—no, I wouldn't know just which came first. I think it is non-essential.

The Master: That may be stricken. Whether it is non-essential or not is immaterial. Just answer his questions.

Mr. Schaefer: Q. Do you think the medical inspection of employees in such a plant is of any public health significance?

A. It may be of some significance.

Q. That is, it is?

A. Not of any great significance. It would be entirely minor.

Q. It is, however, of public health significance?

A. It may be of some public health significance, but minor, because of the time that would elapse and the

1455 drying process that occurs after the product leaves the factory.

Q. Now, what experiments have you conducted with respect to the drying process to which you refer, Doctor?

A. I remember experiments that I made, quite an extensive series, with books from the public library, with respect to various types of germs and the time of their survival in paper.

Q. When were those tests made?

A. That is a number of years ago. I would say it was along in the twenties somewhere. The problem was whether books could be returned from homes that had been quarantined or whether they should be destroyed. I found that there is a very decided reduction in bacterial content of paper. We contaminated these books with diphtheria germs, staphylococci, streptococci, and various germs. There is a very high death rate of germs upon paper. My recommendation was that the books be just simply washed and re-used.

Q. Washed?

A. Just for sanitary reasons, but not sterilized.

The Master: Q. Not what?

A. I say, but not sterilized.

Mr. Schaefer: Q. Now, what tests, Doctor—

1456 The Master: Let him finish.

Mr. Schaefer: I beg your pardon.

The Witness: I might add that one of our recommendations was that they be held for thirty days and be washed and put into service.

The Master: I don't understand that.

The Witness: For a circulating library.

The Master: Go ahead.

Mr. Schaefer: Q. What tests did you perform on those books?

A. Contaminated them with various organisms and then tested them from time to time for recovery of the organisms.

Q. How did you test them?

A. In various ways, depending on the organisms.

Q. For instance, what?

A. By wiping off the pages that had been contaminated. Some of the swabs were put into a bath. Some were put across plates, field plates, some across Loefler's medium for diphtheria germs.

Q. What I am getting at, Doctor, is the method you used to recover.

A. Then an examination of them under a microscope or otherwise for their characteristic properties.

Q. You mean a direct examination of the book?

A. No, of the culture.

1457 Q. What I am getting at is the means that you employed to recover the bacteria from the book.

A. By wiping them with a damp swab. Sometimes we

cut sections of the paper away and deposited those in the culture medium.

Q. And then what did you do?

A. The culture was placed in an incubator for a proper length of time and after that microscopic examinations were made.

Q. At that time you were connected with the Board of Health of the City of Chicago?

A. Yes.

Q. And you were making recommendations?

A. In charge of the laboratories.

Q. Doctor, if we both talk at once we won't get very far. You were an employee of the Board of Health at that time, weren't you?

A. Yes.

Q. And you were making this study in that capacity, is that correct?

A. That is correct.

Q. And at that time you recommended that the books be not re-used but be isolated for a period of thirty days, is that right?

A. That is my memory. Approximately thirty days, and then re-used.

Q. Now, with respect to dairies at which paper 1458 containers are filled with milk, how many such plants have you visited?

A. Two.

Q. Those are the two to which you testified?

A. You mean paper?

Q. Yes.

A. Yes, two.

Q. And those are the two to which you referred on your direct examination?

A. Yes.

Q. How many visits did you make to the Fieldcrest Dairies?

A. One.

Q. And how many visits to Borden-Wieland Dairy?

A. One.

Q. And how long did you remain at the Fieldcrest Dairies?

A. About half a day.

Q. And how long at the Borden-Wieland Dairy?

A. A similar period.

Q. Now, you testified that you were impressed by the general sanitary appearance of the Fieldcrest dairy?

A. Yes.

Q. That general sanitary appearance to which you testified is a factor which may vary from day to day?

A. Somewhat.

Q. It may entirely vary from day to day, as a matter of fact, may it not?

A. I suppose it could.

1459 Q. And, of course, it may vary from plant to plant?

A. Yes.

Q. And does vary from plant to plant, does it not?

A. If you want my personal observation, it did not vary in these two plants that I saw.

Q. Now, answer the question, Doctor. We can understand what it is. I say, it may vary?

A. I think it may.

Q. From plant to plant?

A. I think it may.

Q. The significance, the sanitary significance of white uniforms worn by employees in a dairy is primarily due to the fact that those uniforms may be washed and due to the fact that it is of sanitary significance that the employees do not wear their street clothing, is that correct?

A. Yes; and I should add a third one, and that is that dirt is visible on the white garments.

Q. Those are required generally in dairies in Chicago, aren't they?

A. Yes, that is true.

Q. What type of filling equipment was used in the Borden-Wieland plant?

A. A vacuum cup, with an opening on the top of the carton.

Q. So as to save time, will you compare that type of filling equipment with the type used for filling glass

1460 bottles?

A. Well, it is essentially the same, in that the filling is done through the pouring lip. However, the difference is that the pouring lip is only raised for a few seconds in the case of the paper container, whereas the pouring lip is out in the open for some time in the case of the glass bottle container before it is filled.

Q. Now, do you know as a fact whether there are paper containers which use filling equipment identical with that used in filling glass bottles?

A. I have heard of that.

Q. Do you know whether or not there are paper containers which use a plug lip, which is identical with that used for filling glass bottles?

A. Yes, I have seen them. I have purchased them in various cities.

Q. Now, with respect to the equipment used in filling that last type of paper container, is there any difference between the possibility of contamination of that type of container during the filling process and the possibility of contamination of the glass bottle during the filling process?

Mr. Gariepy: I have an objection to that, Master. I confined the doctor's testimony to the two plants and
1461 two types of containers he saw, and nothing with regard to this other type, which apparently is the conical type, that counsel is asking about.

The Master: I will let him answer. Testing the witness' knowledge on this general subject.

The Witness: A. As to the filling process itself, if you do not include the washing and preparation, it would be the same.

Mr. Schaefer: Q. The screening requirements of the Chicago Board of Health are rather elaborate and detailed, aren't they, with respect to milk plants?

A. Yes, they are.

Q. Did you see any flies at the Fieldcrest dairy?

A. No, I did not.

Q. Not any at all?

A. Not in the filling equipment. I am inclined to think that was due to the dryness of the atmosphere.

Q. Did you see them any place else?

A. Yes, I saw them around the plant.

Q. If flies at the Fieldcrest dairy were in the storage room, there would be the same possibility of contamination in the paper container?

A. In the storage room?

Q. Yes.

A. No. The paper containers are all sealed in the storage room. What do you mean, the empty con-
1462 tainers?

Q. No, I mean this: You may not be able to answer this, Doctor. Do you know whether or not a package of paper containers is always exhausted during a run, or whether they have containers left over?

A. They do have them left over.

Q. Just as they have glass bottles left over?

A. Yes.

Q. After a run?

A. I saw them left over and returned to the carton and carried up to the storage room.

Q. The possibility of contamination applies there the same as the possibility for contamination of the glass bottle after sterilization?

A. No, because of the fact that milk is around the glass bottles and moisture, which is not present around the paper container, moisture particularly.

Q. Did either of the machines get damp while you were there?

A. No.

Q. What do you mean by the pouring lip of a milk bottle?

A. The surface over which the milk is poured from the container by the ultimate consumer.

Q. So that we will have a uniform definition, it has been phrased in this way by other witnesses. Will you
1463 listen and see whether or not you agree with this definition. The pouring lip of a milk bottle or container is that surface of a bottle or container with which milk comes in contact when being poured?

A. I would agree with that.

Q. Now, what tests did you make to determine the pouring lip of a Pure-Pak container?

A. Observation.

Q. Sir?

A. Observation, from pouring, actual pouring.

Q. Will you explain how you did it, by actual pouring?

A. I took some of them home. The family used them.

Q. You took some of them home, and what?

A. The family used them. I watched them lift it and pour it out in this manner (demonstrating). In fact, I was very well impressed with the protection of that pouring lip.

Q. Have you ever heard of that method of determining the pouring lip of a milk container advanced by any scientist?

A. I don't know whether I have discussed it. It is rather observing. I do not know of any better way of testing it than to do it.

The Master: Q. Testing it for what?

1464 A. To pour the milk from the container and see what part of the container comes in contact with the milk. I don't know of any other way of testing it.

Mr. Schaefer: Q. That is the only way you know of?

A. Yes.

Q. Now, there are paper containers, I think you said, which used the same type of disk cap?

A. I have seen them, yes.

Q. To which you referred on your direct examination, as being employed in glass milk bottles, is that correct?

A. Yes, I think so.

Q. The possibility of contamination from the pouring lip of those paper containers is the same as the possibility from the pouring lip of a glass bottle, isn't that right?

A. Yes, exactly.

Q. Did you test the pouring lip of the containers sold from the Borden-Wieland plant?

A. Yes.

Q. The milk put up in those containers is poured across the corner of the container, which is unprotected, is that correct?

A. That is correct. There is a sanitary difference in that bottle, however.

Q. Just a minute. I didn't ask you about that.

Mr. Gariepy: Don't say anything else, Doctor.

1465 The Witness: All right.

Mr. Schaefer: Q. As a matter of fact, the degree of protection of the pouring lip in the case of the glass bottle varies with the shape of the lip of the bottle and with the type of cap employed, doesn't it?

A. I would say with the type of cap employed. I don't think there is enough variation in the lip itself to make any difference, but I think it does vary with the type of cap.

Q. Did you ever perform any experiments to see whether or not it does vary with the type of lip?

A. No.

Q. That is just a guess?

A. Well, it is rather obvious. The portion near the cap is the portion the milk is going to be poured over.

Q. And the shape of the lip, in your opinion, makes no difference with respect to the area of the pouring lip?

A. I think it might make some difference, but not a great deal.

Q. The same factors influence the degree of protection of the pouring lip in the case of the paper container, do

they not? Well, let me rephrase it. The degree of protection of the pouring lip in the case of a paper container depends upon the shape of the container and the type
1466 of covering used?

A. Type of covering rather than the shape, I would say. The type of covering, principally.

Q. How would you go about tracing the outbreak of a contagious disease to the use of paper containers for milk?

A. The epidemiological procedure is, first, to visit the cases, and all possible data bearing upon the source of the disease is recorded, including the source of the water supply, the source of the milk supply, recent banquets, picnics, recent vacations, all information possibly bearing upon the source of the epidemic.

The Master: Q. Let us get down to the point. If you wanted to examine the paper container in which the man received the milk, you could not do it, could you, because the container is not around any more, isn't that right?

A. No.

The Master: All right.

The Witness: It is done epidemiologically, as I started to tell you. In the case of an epidemic, it would soon narrow itself down to, first, the milk dealer and the names of the cases would appear in his customers, and then following it down further it would appear upon the route,
1467 perhaps, if it were the case of the driver, but in that way, by studying the cases and finding one common source, the epidemic is traced.

Mr. Schaefer: Q. Did you conduct any rinse tests of paper containers, Doctor?

A. Personally, no. They were done, however, from time to time under my direction.

Q. What is that?

A. They were done from time to time under my direction, not of milk but of other paper containers.

Q. You have never made any rinse tests of any paper containers containing milk?

A. Not personally, no.

Q. Have you ever made any disintegration tests?

A. No.

Q. You referred to a triple sterilization process, Doctor, in your direct examination this morning. What do you mean by that?

A. In a paper plant. In the first place, the dissolving

of a pulp in a strong alkali, which is of itself at rather high temperature and a sterilization process.

Q. Let me ask you right there, suppose the pulp is disintegrated by mechanical means, what happens to that method of sterilization?

A. It would depend on what temperature it is
1468 done under. It would depend entirely on the temperature.

Q. When it is done by mechanical means?

A. Yes.

Q. I see. Go ahead.

A. If it is done at a high temperature, it would be sterilized, otherwise not, unless caustic chemicals were present.

Q. Yes.

A. The next procedure is the reprecipitation, which again—

Q. Is what?

A. The reprecipitation of the pulp.

Q. What do you mean by that?

A. The first process dissolves the pulp with a strong alkali, and then an acid is added to reprecipitate it, and then the pulp is washed and rolled out at a high temperature into thin sheets. The high temperature of the roller is, again, a sterilizing process.

Q. Did you ever perform any tests on paper which came off the roller of a paper mill, to ascertain the bacteriological content of such paper?

A. I have not conducted such tests.

Q. Milk is an essential item in the diet of infants, is it not?

A. Certainly.

Q. And children.

A. Yes.

Q. Are oysters an essential item in the diet of in-
1469 fants?

A. No.

Q. Children?

A. No.

Q. How about Coca-Cola?

A. Not essential. Commonly used.

Q. Why is there no occasion for the inspection of plants at which glass bottles are manufactured, by public health officials?

A. Because the product necessarily in its finished state, when the manufacturing process is finished, must be free of germs, or practically so, just as in the case of a paper container when it is just finished.

Q. Does the absorbency or non-absorbency of the glass bottle make any difference with respect to whether or not it is important from a public health point of view to inspect the mill at which the glass bottles are made?

Mr. Gariepy: There is no contention made that the glass bottles are absor' ent, Master.

The Master: Let him answer.

The Witness: A. I think it would make very little difference, because germ life will attach itself to impervious surfaces. There would be a similar hazard in both instances.

The Master: Now, he is not asking you about
1470 other instances. Just confine yourself to his question.

Mr. Schaefer: I am glad to have the doctor show his interest, if the Master please.

Q. Now, you first learned of this litigation how long ago?

A. Several weeks.

Q. You learned of it from a clipping in the newspapers?

A. Yes, sir.

Q. And you volunteered to testify here because of your very considerable experience with paper containers?

A. My experience in public health, general knowledge of containers.

Q. Your experience with paper containers at that time, your own experience, was absolutely nothing, was it not?

A. I have had experience with paper containers on other things than milk.

Q. Just a minute, Doctor. Your experience with respect to paper containers for milk, at the time you volunteered your services in connection with this case, was absolutely nothing, is that correct?

A. That is not correct.

Q. Now, you have testified that you had no experience with respect to paper mills.

A. That is true.

Q. Is that correct?

A. Yes.

1471 Q. And you have had no experience with respect to conversion plants, is that correct?

A. That is true.

Q. And your experience with respect to the two dairies at which the paper containers were filled with milk was acquired subsequent to your volunteering your services in this litigation, is that correct?

A. All of it? No.

Q. Now, which plant did you visit prior to the time you volunteered your services in this litigation?

A. I did not visit a plant. These are personal experiences in other cities.

Q. I am asking for your personal experience.

A. Yes, in other cities.

Q. In inspecting plants?

A. Pardon me?

Q. At which paper containers are filled with milk.

A. My first experience in paper containers was in being at places—

Mr. Schaefer: Just a minute. I ask that the witness answer the question, Master.

The Master: Yes. Read the question.

(The record was read by the reporter as above recorded.)

The Master: Put your question over again.

Mr. Gariepy: There are two questions there, Master.

1472 The Master: Yes. Ask one question, not two.

Mr. Schaefer: Q. What dairy at which paper containers were filled with milk for distribution did you visit prior to the time you volunteered your services in this litigation?

A. I did not visit any dairy.

Q. All right.

A. But I experienced—

The Master: Doctor, you have answered the question.

Mr. Schaefer: You have answered the question now.

Mr. Gariepy: Just a minute, Doctor. Just answer his questions.

Mr. Schaefer: Q. Now, your personal experience with respect to the manufacture, processing, handling and filling of milk containers at the time you volunteered your services in connection with this litigation was absolutely nothing, is that correct?

A. That is incorrect.

Q. Now, what personal experience had you had with

the manufacture of paper board for the use of paper containers, prior—

The Master: Paper containers of what?

Mr. Schaefer: Paper containers for milk.

Q. (Continuing.) —prior to the time you volunteered your services here?

A. In the purchase of milk in such containers in
1473 the city of Washington and city of New York.

Mr. Schaefer: I move to strike that as not responsive, Master.

The Master: That is not responsive. Read the question.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: A. Referring to the handling, the purchase—

The Master: No, read the question again.

Mr. Gariepy: Just listen to the question and answer it.

(Mr. Schaefer's last question was again read as above recorded.)

The Witness: A. None.

Mr. Schaefer: Q. What personal experience had you had with respect to the cutting, printing, scoring of paper for use in paper containers for milk, prior to the time you volunteered your services in this litigation?

A. None other than general knowledge.

Q. In other words, none, no personal experience?

A. Not personal.

Q. Now, what personal experience had you had with respect to the plants at which paper containers are
1474 filled with milk for distribution and sale, prior to the time you volunteered your services in this litigation?

A. None, other than general knowledge.

The Master: The latter part may be stricken. He only asked you what your personal experience was.

Mr. Schaefer: Q. Then, as a matter of fact, Doctor, at the time that you volunteered your services to testify in this case you had had no personal experience with the manufacture of paper board for use in paper milk containers and with the subsequent handling and processing of that paper board and with the filling of the milk containers with milk, is that correct?

A. If you confine me to personal observation, that is correct.

Q. Now, Doctor, do you have any secret sources as to

the available literature on the subject of the sanitary aspects of milk containers?

A. No.

Q. The only knowledge you have of that literature is knowledge that is available to anyone who studies it, is that correct?

A. Or who attends conventions and listens to discussions.

Q. You sat here during the hearings on this matter
1475 or during the hearings in this case on how many separate days, Doctor?

A. I would not know offhand. Perhaps a half dozen. You would know as well as I, no doubt.

Q. You had some difficulty, Doctor, with Dr. Kegel, was it, a former commissioner of the Health Department of the City of Chicago?

A. At one time, yes.

Q. And you employed attorneys at that time?

A. No.

Q. You did not?

A. No.

Q. You consulted with attorneys at that time?

A. No.

Q. Now, with how many health commissioners have you had difficulties, in addition to Kegel?

A. I have had differences of opinion as to policy with Dr. Bundesen from time to time.

Q. Now, with whom was your difficulty at the time I met you when Mr. Chandler was representing you?

A. I am sorry, I have forgotten that. It is true, I did consult him in the case of Kegel.

Q. That was in connection with Kegel?

A. Yes. I had forgotten that. I am sorry.

Q. That was when I met you, isn't that right?
1476 A. Yes. That was a very brief incident.

Mr. Gariepy: What year was it? Let us get the time.

The Witness: About 1939.

Mr. Schaefer: Off the record, please.

(Discussion off the record.)

Mr. Gariepy: Kegel was health commissioner of the city here, was he?

Mr. Schaefer: Q. His name is Arnold Kegel, is it not?

A. I think so.

Q. K-e-g-e-l?
A. That is right.
Q. As a matter of fact, you bear considerable personal ill will towards Dr. Bundesen, don't you?
A. No, I don't. I bear no ill will.
Q. You bear no ill will whatever?
A. No.
Q. You have pending a suit against the city of Chicago for reinstatement by the Board, as an employee of the Board of Health, is that correct?
A. No. I dropped that suit.
Q. Is it not a fact, Doctor, that the suit is still pending?
A. Well, if it is, I don't know it.
Q. You filed such a suit, did you not?
A. Yes, I did.

Q. You have made charges of incompetency and
1477 malfeasance in office against Dr. Bundesen at various times and places, have you not?

A. Not that I remember, in such words as that. I have criticized some of his acts, because I thought they were wrong. I have told him so himself.
Q. And you have told other people so, at various times and at various places, is that correct?
A. I may have discussed some of these policies, as a matter of fact I am sure I did, with some of the scientific men in town, on matters that I considered of great importance to the public health.
Q. As a matter of fact, in the suit that you filed in 1937 you charged that Dr. Bundesen was personally responsible for your removal?
A. I think I did, at that time.
Q. As an employee of the Board of Health?
A. I think I did, and I think that is true.
Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. As a matter of fact, they abolished the office, Doctor, that you held at the Board of Health at that time, is that right?
A. That is right.

Q. And this suit that Mr. Schaefer refers to was
1478 a suit for reinstatement?

A. Exactly.

Q. He asked you concerning visiting milk plants and milk dairies previous to the time that you testified in this cause or offered your services to testify in this cause.

A. Yes.

Q. Did you visit milk plants?

A. Prior?

Q. Yes.

A. Yes, very often.

Q. Do you know of any reason, from a bacteriological standpoint or public health standpoint, why the rinse test as used upon paper containers permitted for food and other liquids in the city of Chicago should differ from a rinse test as permitted upon paper containers for milk?

A. I see not difference in general applicability.

Q. What is the object of the rinse test on either of them, Doctor?

A. To get a relative idea of the number of bacteria on the inside of the container, on the inner surface.

Q. When you were at the Fielderest Dairies plant in Chemung, Illinois, Mr. Schaefer asked you with regard to what your observation was concerning a package of blanks, unfilled and unereased containers there. Did

1479 you see a package partly filled and partly used there in operation?

A. Yes, I did.

Q. And what did you see happen to that container while you were there?

A. I saw the attendant put the material back into the original carton and close it up and send it away.

Q. And where did he take it, do you know?

A. I understand it was taken back to the storage room.

Q. Now, this matter of variation in the degree of sanitation at the plaintiff's plant, the Chemung plant, as compared with the matter of variation and the degree of sanitation that you would except to find in a glass milk bottle plant; what is that based upon, this degree of variation which he asked you about, that you would expect to find from time to time?

A. Well, it is based upon the degree of openness of the processes, the number of employees that handle the containers and the mechanical system of opening and filling, which in the case of the paper container I thought was much superior to the opening and filling of glass containers.

Q. Does the number of inspections performed by the inspectors for the Board of Health have anything to do with the degree of sanitation existing from day to
1480 day, the quality of sanitation?

A. Of course, the theory of inspection is a punch-up.

Q. By that you mean what, Doctor, so we understand how you are using that phrase?

A. It is keeping the plant on its toes. They don't know when the inspector is going to be there. Of course, the inspector can't be there every hour of the day, and the point is that the employee does not know when he is going to come in.

Q. So there would be no safeguard such as watching the degree of sanitation existing all the time?

A. Not all the time. However, that is the purpose of inspection, a punch-up.

Mr. Gariepy: That is all, Doctor.

Mr. Schaefer: That is all.

The Master: You are excused.

(Witness excused.)

Mr. Gariepy: Mr. Dean, there was just one thing that Mr. Schaefer asked you about that I would like to bring out.

1481 S. E. DEAN, JR., recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. Mr. Dean, do you know the practice at the Chemung plant, at the Fielderest dairy, concerning the use of the cardboard carton of blanks in the machine when it is partly used and partly unused and the run is through? What do you do with it?

A. We received instructions from the—

Q. Not that you received instructions. What do you do?

A. We fold back the top of the carton and seal it with a piece of sealing tape.

Q. Then what do you do with it?

A. Return it to the storage room.

Q. So there is not any condition or circumstance under

which these blanks in these brown fiber cartons are left hanging around the place?

A. No.

Mr. Gariepy: That is all.

Mr. Schaefer: No questions.

(Witness excused.)

1482 Mr. Gariepy: Just one more witness, Master, who will be very short.

FRANK H. BERGMAN, called as a witness on behalf of the plaintiff, being first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please.

A. My name is Frank H. Bergman.

Q. And your address, please?

A. 171 West Madison street. Do you want my home address?

Q. Yes.

A. 3009 Leland avenue.

Q. And your business and occupation?

A. Manager.

Q. Manager of what?

A. Of a restaurant.

Q. What restaurant?

A. 171 West Madison street.

Q. Whose restaurant is that?

A. Mr. D. L. Toffenetti's.

Q. How long have you been manager of that restaurant?

A. About three or four weeks.

Q. How long have been manager of any Triangle restaurants in the city of Chicago for Mr. Toffenetti?

A. Seventeen to eighteen years.

Q. Seventeen or eighteen years?

1483 A. Yes, that is right.

Q. And your duties as manager are what?

A. Of everything, the whole dining room.

Q. I show you a paper container (handing container to the witness). Is that a paper container from the Triangle restaurants?

A. That is right.

Q. Have you, as manager of Triangle restaurants, ever received any instructions from the Board of Health of the City of Chicago that you are not to use these paper containers in the sale of milk?

A. Never that I know of.

Mr. Schaefer: I object to that, if the Master please.

The Master: I will let him answer.

The Witness: A. I don't remember.

Mr. Gariepy: That is all.

The Master: What was that?

Mr. Gariepy: He doesn't remember.

The Witness: That would go to our main office.

Mr. Gariepy: Q. But you have never had any?

A. No, I could not tell you of any.

Mr. Gariepy: That is all, Mr. Bergman.

The Master: Any questions, Mr. Schaefer?

Mr. Schaefer: That is all.

1484 The Master: Thank you. That is all.

(Witness excused.)

The Master: Are you through now?

Mr. Gariepy: There is one question on the depositions in here with regard to the matter of the hazard, if any, from the oxidation of paraffin. Have you gone into that with Dr. Arnold, Mr. Schaefer, whether there is any or not?

Mr. Schaefer: Yes. Off the record.

(Discussion off the record.)

Mr. Gariepy: With the exception of the depositions and the proof on that item, which apparently was a hiatus in the East when the deposition was taken and never cleared up, the plaintiff rests.

Have you been over the depositions, Mr. Schaefer?

Mr. Schaefer: No. The answer then is that the plaintiff does not rest.

Mr. Gariepy: Except that point in the depositions, we want to clear that up. If we cannot agree with you on it, we want to put on some proof.

The Master: When will you be ready to go ahead, Mr. Schaefer?

Mr. Schaefer: When the rest of his proof is in.

Mr. Gariepy: That is all there is, the depositions 1485 and that.

The Master: How long will that take?

Mr. Gariepy: We can get somebody here tomorrow to clear that up. I don't want this left high in the air, that

there is any health problem by reason of the oxidation of paraffin at high temperatures.

The Master: Off the record.

(Further discussion off the record.)

The Master: This matter will proceed, on behalf of the defendant, on October 11th at 10 o'clock, and I will also put down the 12th, but we will see then how far you get along on the 11th, as to whether we go on on the 12th.

Mr. Schaefer: That is agreeable.

The Master: I will put it down for the 11th, 12th, and 13th of October, and if it is not necessary to go on on the 12th, we will go on again on the 13th, anyway.

Mr. Schaefer: That is agreeable.

The Master: This will be continued then, subject to call from Mr. Gariepy as to when he will put in his remaining testimony, which I understand will not take very long.

Mr. Schaefer: We can give you a call some late afternoon and come in here.

1486 Mr. Gariepy: Yes. We will try to let you know a day or two in advance.

The Master: Very well.

(Whereupon the hearing in the above entitled cause was continued to 10 o'clock a. m., Wednesday, October 11, 1939, subject to call for the purpose of putting in additional evidence on behalf of the plaintiff before that date.)

1487 * * (Caption) * *

Friday, October 6, 1939,
2:00 o'clock, p. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan, Counsel of record.

1488 The Master: Are you ready to proceed?

Mr. Rall: We are ready. Mr. Gariepy has asked me to interrogate the witness, because this point arises out of some depositions taken in New York that I attended.

HOWARD R. PETERSON, was called as a witness on behalf of the Plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Rall.

Q. Will you please state your name?
A. Howard R. Peterson.
Q. Where do you live?
A. 5543 Kimbark Avenue, Chicago, Illinois.
Q. What is your business or occupation?
A. Engineer, Standard Oil Company of Indiana.
Q. What is your title, or in what department are you?
A. Engineer, Technical Department.
Q. For the record, what is your age?
A. 41 years.
Q. Did you attend a college?
A. I did.
Q. What was your college training?
A. Undergraduate work at the University of Paris and Nebraska University.
1489 Q. Did you receive any degrees from there, any of those institutions?
A. I did.
Q. What degree did you receive?
A. Bachelor of Science, University of Nebraska.
Q. Following what, what was your training?
A. Post graudate work, chemistry and chemical engineering, University of Chicago.
Q. During what period?
A. 1934 to 1938.
Q. Following your graduation from the University of Nebraska, in what business or profession did you engage?
A. For six months, Statistician, State of Nebraska; beginning January 1, 1923 with the Standard Oil Company of Indiana.
Q. Just in brief, what has been your experience with that company, so far as your occupations have been concerned?
A. I served as salesman, engineer and technical engineer.
Q. How long have you been in the technical department?
A. Three years and ten months.

Q. Does the Standard Oil Company manufacture, among other products, paraffin wax?

A. Yes, sir.

1490 Q. Are you acquainted with the chemical properties of paraffin wax, according to the U. S. Pharmacopoeia XI definition of the melting point, American melting point of from 125 to 127 degrees F?

A. Yes, sir.

Q. Are you also acquainted with the point at which and the time within which such paraffin wax commences to oxidize?

A. Yes, sir.

Q. Will you describe briefly what you mean by the term oxidation of paraffin wax?

A. The oxidation of paraffin wax refers to the chemical combination of oxygen with the petroleum hydrocarbons; the chemical combination of oxygen with the petroleum hydrocarbons.

Q. Is the oxidation rate of paraffin wax rapid or slow?

A. The oxidation rate of a refined paraffin wax is characterized by an initially high resistance to oxidation, following which oxidation is comparatively rapid.

Q. The rate of oxidation, as I understand it, depends upon the length of time to which the wax is exposed to heat, is that true?

A. That is correct, in the presence of oxygen.

1491 Q. In the presence of oxygen?

A. Yes, sir.

Q. Using any convenient number of degrees, will you give us the time at which paraffin wax commences this process of oxidation?

A. A refined paraffin wax, held at 210 degrees F. has an initial resistance to oxidation of about twenty hours, during which time no oxidation occurs.

Q. Taking higher and lower temperatures, can you tell us the length of time that it would take, that these processes would take to commence?

A. That is dependent upon the temperature coefficient of oxidation of refined wax, which is about fifteen degrees. In other words, if the temperature is increased by fifteen degrees, the rate of oxidation doubles. If the temperature is decreased by fifteen degrees, the rate of oxidation is reduced to one-half.

Q. At 195 degrees temperature, when would oxidation commence?

A. After approximately forty hours.

Q. At 225 degrees, it would take what time to commence?

A. After approximately ten hours.

Q. At 180 degrees?

A. After approximately forty hours.

1492 Q. Every fifteen degrees reduction of temperature, from 180 degrees down, would practically double the length of time before the oxidation process commences?

A. That is correct.

Q. Are you acquainted with the Ex-Cell-O Machine?

A. Yes, sir.

Q. Did you make certain practical tests on the machine with paraffin wax of this description at the Ex-Cell-O Plant in Detroit?

A. I did.

Q. When was that?

A. In the spring of 1939, I don't recall the exact month.

Q. What was the purpose of the test?

A. To determine the suitability of certain waxes in these machines.

Q. In other words, you were seeking to convince Ex-Cell-O that it should permit the use of wax of your manufacture by its licensees in these machines?

A. That is correct.

Q. Was the wax which you used within the definition that I have given you?

A. Yes, sir.

Q. And in your testimony when you refer to refined paraffin wax, you refer to wax of the description and

1493 definition that I gave?

A. Yes, sir.

Q. About how much paraffin wax at one time does the Ex-Cello-O Machine hold?

A. By absorption between 50 and 60 pounds.

Q. Did you make any calculations at the time you were there as to the factor of safety, taking into account the length of time in which the wax was in the chamber and the temperature at which it was held, as to the oxidation process?

A. I did.

Q. What was your result?

A. That a very large factor of safety exists, possibly

in the neighborhood of four hundred or five hundred percent.

Mr. Rall: You may cross-examine.

Cross-Examination by Mr. Schaefer:

Q. What is the difference between an engineer and a technical engineer, Mr. Peterson?

A. There are efficiency engineers and a great many other types of engineers. I should say a technical engineer is an engineer who specializes in sciences,
1494 in the exact sciences.

Q. An engineer who is not a technical engineer does what?

A. In the case of efficiency engineers, perhaps it is in the field of social science, and yet they are termed engineers.

Q. What is the relation between the oxidation of paraffin and the melting point of paraffin?

A. I think the only connection between the two is this —that oxidation in the molten state is much more rapid than in the solid state; consequently, more rapid oxidation would occur in a low melting point wax such as 125 or 127 A. M. P., at 127 degrees than would occur at the same temperature of a wax which were solid at the same temperature. In other words, the two waxes, one may be solid at 125 and the other may be liquid at 125. The one which is liquid at 125 would oxidize more rapidly at 125 than the one which were solid at the same temperature. At temperatures above the melting point, I know of no connection or correlation between the two.

Q. The paraffin which you have described is United States Pharmacopoei melting point 125, is that the paraffin you have been talking about?

A. 125-127 A. M. P.

Q. Melted paraffin of that type, at 125 degrees
1495 will oxidize, will it not?

A. It will, after the initial induction period.

Q. How did you determine the period of initial resistance to oxidation?

A. By exposing the wax to 210 degrees F. for the period of time in question in the presence of air.

Q. What physical means did you use?

A. A test for peroxides. Peroxides are the first evi-

dences of the chemical combination of oxygen with the petroleum hydrocarbons.

Q. Just go ahead and describe what you did, if you will, Mr. Peterson?

A. The test for peroxides consists of the use of ferric sulphate and thio cyanate, in the presence of peroxides a deep red color is formed; in the absence of peroxides no color is formed.

Q. In what is the color formed?

A. The mixture of ferric sulphate, thio cyanate and the wax, and if peroxides are formed in the wax, a deep red color results; in the absence of peroxides no such color is formed.

Q. How did you expose your paraffin in that experiment to 210 degrees F?

A. That is exposed in an open beaker.

1496 Q. About the size and shape of a water tumbler, approximately?

A. 600 to 800 cc's.

Q. Shaped how?

A. With the sides parallel.

Q. Round in shape?

A. Round in shape.

Q. How much paraffin did you put into that?

A. Between 600 and 800 cc's.

Q. That is you filled it up?

A. Yes, sir.

Q. Then what did you do?

A. Exposed it to 210 degrees in a water bath, taking samples from it at regular intervals.

Q. So that I can clear this up as I go along, you mean you put that beaker into water?

A. In the water.

Q. Heated to temperature of 210 degrees F.?

A. That is correct.

Q. You did not submerge it completely?

A. No contact between the paraffin and the water, that is correct.

Q. You held it at that temperature for the length of time you have indicated?

A. And longer, taking samples at regular inter-

1497 vals; withdrawing samples from the beaker at regular intervals.

Q. How did you take your samples?

A. How are the samples taken from it?
Q. Yes.
A. By being dipped in a clean container, dipped from it in a clean container.
Q. Then what did you do with your samples?
A. Tested it with the peroxide test solutions that I have just referred to.
Q. You have seen the operation of the Pure-Pak Machine, have you not?
A. Yes, sir, in the factory.
Q. Yes.
A. Yes, sir.
Q. Was that running containers through the paraffin bath at the time that you observed it?
A. Yes, sir.
Q. At what rate do you remember were they running during that bath?
A. At a rate of between fifteen hundred and two thousand per hour. I can't give it specifically.
Q. As each container went into that bath, it went in in an inverted position, did it not?
A. I prefer not to answer that. I don't remember.
1498 Q. Was the paraffin bubbling all of the time?
A. No, sir. Bubbling?
Q. Yes.
A. I don't understand the meaning of the word "bubbling" in this connection. If by that you mean boiling—no.
Q. I don't mean boiling. You described what you saw on the Ex-Cell-O Machine?
A. The molten paraffin is, of course, somewhat agitated by the procession of containers through it.
Q. It is also agitated, is it not, by the fact that the containers come in inverted, carrying with them a quart of air, each quart container?
A. That is possible.
Q. That means in the actual operation very substantially more oxygen is in contact with the paraffin and in contact at different positions than was the case in the experiment which you conducted?
A. That is possible.
Q. That is true, assuming that the container goes in, inverted, as I stated—which you don't know?
A. That is correct.

Q. That paraffin, in addition to being agitated by the procession of containers—is that correct?

A. That is correct.

1499 Q. So that in that respect the operation of the machine differs substantially from your experiment?

A. From that particular experiment, yes.

Q. That is in your experiment the paraffin was not agitated?

A. That is correct.

Q. And there was no air induced into the paraffin below the surface?

A. That is correct.

Q. So that you had one constant surface remaining exposed in your expeirment?

A. That is correct.

Q. In actual operation of the machine the paraffin is constantly being agitated by the procession of containers through the paraffin bath?

A. It is.

Q. And also air is being introduced below the surface of the paraffin?

A. I can't answer that.

Q. What other kinds of paraffin are there, in addition to the U. S. P. type which you have described?

A. There are paraffin waxes below the minimum melting point of the U. S. P. There are waxes above the maximum melting point of the U. S. P. There are waxes which do not conform with the color, regardless of the U. S. P.,

1500 and there are waxes which do not conform with the said acid requirements of the U. S. P.

Q. What are the variations in the melting points of paraffin?

A. The maximum variations are between approximately 105 and 180.

Q. Is Hexacontane a paraffin?

A. It is a paraffin.

Q. It has a melting point of 215.6 degrees F., is that right?

A. You asked me if it was a paraffin. It is, but it isn't a wax, necessarily.

Q. I didn't ask you that. It is a paraffin?

A. A paraffin, yes.

Q. It has the melting point which I mentioned?

A. According to the chemical definition of paraffin, there is methane paraffin, which is gas.

Q. And that has a melting point how far below zero?

A. Approximately 200, but I don't remember the exact figure. It is far below zero.

Q. It is far below zero?

A. Yes.

The Master: You say it is far below zero?

A. Far below, yes.

Mr. Schaefer: Q. What are the principal compo-
1501 nents of U. S. Pharmacopoeia paraffin such as you have described?

A. The principal components of U. S. Pharmacopoeia paraffin are hydrocarbons of the paraffin series with between 24 and 30 carbon atoms.

Q. How many hydrogen atoms?

A. They conform to the formula CNH^2N plus 2.

Q. That paraffin contains tetracosane?

A. I don't remember the carbon atoms in tetracosane.

Q. Twenty-four?

A. Then it does.

Q. Does that contain hexacotane, that would be 27?

A. It does. These are generally referred to by the number of carbon atoms.

Q. Yes.

A. Yes.

Q. Will you explain the process of oxidation, what happens?

A. That is the chemical combination of oxygen with the petroleum hydrocarbons.

Q. The initial period of resistance which you described varies with the degree of temperature applied to the paraffin?

A. Yes, sir.

Q. It varies with the amount of oxygen with which the paraffin is in contact?

1502 A. Yes, sir.

Q. With what else does it vary?

A. Time, temperature and exposure.

Q. How about contact with other active mechanical substances, in addition to oxygen?

A. By that you refer to catalysts, I presume.

Q. That is correct.

A. Catalysts may accelerate oxydation. Catalysts

accelerate oxidation of hydrocarbons of the paraffin series to a slight extent, much slighter extent than hydrocarbons of the other series.

Q. Catalysts are themselves products of the oxidation of paraffin?

A. They may or they not be.

Q. Where else would they come from?

A. Metals will serve as catalysts, metalist metals with which the paraffin is in contact.

Q. From what other sources?

A. I know of no other than the two referred to.

Q. Have you described the produces of oxidation of paraffin?

A. Have I described them?

Q. Here—I don't believe you have. Would you do that?

1503 A. The products of oxidation of paraffin, to my knowledge, have never been isolated; consequently, their physical contents have not been determined.

Q. Has their general nature been determined?

A. The classes to which they belong have been determined.

Q. To what classes do they belong?

A. Alcohols, esters, ketones, paraffin lactones.

Q. Generally, those products are acid?

A. Yes.

Q. Do they have an odor?

A. Some do.

Q. What type of odor is that?

A. The product of oxidation of a paraffin wax results in a rancid odor.

Q. Do they have a taste?

A. Yes.

Q. What type of a taste is that?

A. It is distinctive, but I don't know what it tastes like.

Q. One of the products of oxidation is succinic acid, is that correct?

A. It might me.

Q. That is a pungent odor?

A. As I recall it—it has.

1504 Q. While we are dealing with the matter of odors, will you describe the odor of the paraffin bath heated?

A. The odor of a heated paraffin bath is entirely depend-

ent upon whether the paraffin has been exposed to high temperatures over a long period of time or not. A fresh paraffin bath heated to 160 degrees or 180 degrees has a distinctive sweet paraffin odor, very milk. If that same bath were held at that temperature for many days beyond the induction period of the wax, it would assume a rancid odor.

Q. Assuming that paraffin is added to the paraffin bath of an Ex-Cell-A Machine in a hard state, as made necessary by the paraffin removed, taken out by the containers as they go through, how would you describe the odor from such a paraffin bath?

A. As a very mild characteristic sweet paraffin odor.

Q. Now, assume that that bath was not emptied but that paraffin was simply added to it as needed, how would you describe the odor?

A. That would entirely depend upon the rate of consumption, if you have, for example, 100 pounds of wax in a bath, and the consumption is one pound per day, the time of exposure to the temperature in question would be enormous. If the same bath contains 100 pounds, and
1505 the rate of consumption is 100 pounds per hours, one might expect a complete turn over in volume each hour, the time of exposure, therefore, being very short.

Q. Yes, of course, that complete turn over in volume would not mean a complete replacement of all of the paraffin?

A. No. That may be true. In other words, a small amount might be recycled or remain until the next hour, perhaps.

Q. Or even until the next week, possibly, is that right?

A. But a continually reducing quantity, a continually diminishing quantity.

Q. According to the natural probabilities?

A. That is correct.

Q. You have not conducted any experiments to determine how much paraffin remains in a paraffin bath and how much is taken out, have you?

A. I dare say that could not be determined. One could not separate the wax that was put in at nine o'clock from that that was added at ten o'clock.

Q. So the machine that you visited at Detroit was not actually used in a dairy?

A. No, sir, it was in the factory.

1506 Q. Have you ever seen one in operation in a dairy?

A. No, sir.

Q. What was the odor up there in the factory?

A. I recall no unusual odor.

The Master: Q. Do you recall any odor?

A. I don't recall. Had there been an unusual odor I undoubtedly would have observed it. I recall none.

Q. Unusual, of course, depends on what you have been smelling right along.

A. I have my office at South Michigan and odors are not unusual.

Mr. Schaefer: Q. Did you perform any experiments to determine the time of the initial period of resistance to which you referred in paraffin in actual operation, paraffining containers?

A. I don't believe I understand the question.

The Master: Read the question.

(Question read by the Reporter.)

A. Those experiments have only been performed with similar wax, but not with the wax actually used at the plant.

Q. You performed none under actual operating conditions?

1507 A. No, sir.

Mr. Schaefer: Q. Where wax was re-used and you had the accumulated presence of products of the prior oxidation of paraffin?

A. In an Ex-Cell-O Machine we have not.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Rall.

Q. Are the acids that result from oxidation of paraffin wax of this description liquids or solids?

A. Most of them are solids at room temperature.

Q. Assuming that paraffin wax had oxidized to some extent and a paper container was immersed in it and then cooled, in what form would any acid that resulted from oxidation then be?

A. In the form of a solid with the wax.

Q. What general family or type of acids are these that you refer to?

A. Organic acids.

Q. Will you tell the Master briefly, and for the record, the difference between organic and inorganic acids?

A. Organic acids are those resulting from organic compounds. Inorganic acids are those from inorganic compounds.

1508 Q. Will you give us some examples of each type?

A. Inorganic are nitric acid; sulphuric acid; hydrochloric acid; hydrofleuric acid. Organic acids are malic acid, citric acid, propionic acid, butynic acid, lactic acid.

Q. The inorganic acids are generally those that we consider dangerous or harmful acids?

A. Very much stronger.

Q. How would you describe the acids which would result from paraffin, with respect to their strength?

A. Extremely weak.

Q. The edible acids, for instance lactic acid, is an edible acid, isn't it?

A. It is found in edible products.

Q. Citric acid is edible?

A. Yes, sir.

Q. Those are organic acids?

A. That is correct.

Q. You observed the operation of the Pure-Pak Machine at least in general when you were there in Detroit, did you not?

A. Yes, sir.

Q. Taking into account whatever agitation of the paraffin bath there may be in practical operation, and taking into account the possibility of that inserting empty

1509 containers brings a larger amount of air in contact with the paraffin than in the experiments you performed, taking into account the volume of the paraffin bath, assuming for this question the temperature ranging from 180 to 195 degrees F., and taking into account the fact that the paraffin does come in contact with metal in the Pure-Pak Machine; do you have an opinion whether, considering all these elements, paraffin wax oxidizes in the operation or in the process of the manufacture, that is, the paraffin coating of Pure-Pak Containers?

A. I do have an opinion.

Q. What is that opinion?

A. That it does not.

Q. What is done with the paraffin, if you know, at the end of the run?

A. It is removed from the machine.

Mr. Schaefer: I object to that. The witness in response to my questions said he had never seen the operation at any time.

Mr. Rall: We will withdraw that, then.

The Master: I want to see what the witness knows. Read the question back.

(Question read by the Reporter.)

Q. How do you know that?

1510 A. At the end of the runs that were made in the factory, the wax was removed from the machine before closing the plant at night.

Q. What factory are you talking about?

A. The Ex-Cell-O Corporation.

Q. Did you see it done?

A. I saw the clean machine the next morning and was told that it had been removed and cleaned the night before. I have not, as I previously stated, observed these machines in operation in a dairy.

The Master: I will let it stand as to what he does know about it.

Mr. Rall: Q. In adding paraffin to the Pure-Pak Machine, what is the mechanics of doing it?

Mr. Schaefer: That is objected to.

The Master: Read that question.

(Question read by the Reporter.)

Q. Do you know anything about it?

A. I observed it at the factory, I observed that.

Mr. Schaefer: That, if the Master please, if it is the only time the witness has observed it, is of no significance here.

The Master: Limit it to what he observed.

Mr. Rall: Q. Limit it to just what you did observe?

1511 A. That was not in a dairy, I observed that, a ten-pound cake of wax was added to a container that might be described as a melting container; the wax, after being melted in this container, went into the dipping compartment.

Q. Would you call that a pre-heater?

A. It might be termed a pre-heater.

Q. What, from observation, did you conclude was the approximate capacity of the machine in pounds of paraffin?

A. Fifty to sixty pounds.

Q. Do you know the approximate amount of paraffin used per hour for the number of cartons from 1500 to 2000 that the machine was running when you observed it?

A. The engineers in charge of the machine stated that 30 pounds of wax per 1000 containers was desired and the tests were conducted on that basis and the containers weighed after the test to determine if they all contained approximately that amount of wax.

Mr. Schaefer: If the Master please, I move to strike that answer. I move to strike it on the ground that it depends upon hearsay.

The Master: Yes. It may be stricken.

Mr. Rall: Q. Did you, following the tests, weigh containers to determine the amount of wax which they had absorbed?

1512 A. I observed the weighing of the cartons prior to waxing; I personally marked on each container or carton the weight. I observed the weighing of the cartons after waxing and again personally marked the weights.

Q. Taking a thousand cartons, what were the sizes of the cartons?

A. One quart.

Q. Taking a thousand with those figures that you had, what is the approximate weight of the paraffin wax result from the operation that you observed?

A. It varied between 28.6 and about 31.

Q. Pounds?

A. Pounds per 1000 cartons.

Q. So that if the paraffin in the machine was approximately 60 pounds, each thousand containers would use approximately half of it?

A. That is correct.

Q. And two thousand an hour, they would use about 60 pounds of paraffin an hour?

A. That is correct.

Q. And if the rate were slower, they would use less?

A. That is correct.

Q. When you described the odor of the paraffin bath in the Ex-Cell-O Machine which you observed as a

1513 typically fresh sweet paraffin odor, you mean that there was no trace of rancity or any trace of an odor which you could identify as being a product of oxidation, is that correct?

A. That is correct.

Q. Was there at any time during the operation of the machine that you observed, any odor which would indicate oxidation of the paraffin?

A. No, sir.

Q. I believe you testified that if the paraffin had been exposed long enough to a great enough temperature so that it did oxidize, a person could smell the rancid odor resulting from oxidation?

A. That is correct.

Mr. Rall: That is all.

Recross-Examination by Mr. Schaefer.

Q. You testified that the acids which were products of oxidation would be solid at 40 degrees F. In what form would they be at 160 degrees F?

A. The various acids formed from oxidation vary within rather wide limits as to their solid point. Some may be solid at 40; some might be solid at 160.

Q. And some might be liquid at 160?

A. That is correct.

1514 Q. There is an odor comes from paraffin upon heating before oxidation begins, is that correct?

A. A very slight distinctive odor.

Q. When you refer to edible acids, you were referring to acids which were edible in quantities normally found in the foods that you described?

A. That is correct.

Q. Such as lemons, et cetera?

A. Yes, sir.

Q. You did not mean to infer that the acids themselves were ordinarily considered as edible?

A. That is correct.

Q. Is paraffin produced to comply with the United States Pharmacopoeia Standard relatively expensive to produce?

A. Relative to what?

Q. Relative to other types of paraffin?

A. If by that you refer to producing a wax which will conform to the U. S. P. Standards, as contrasted to a wax of similar melting point which will not—the difference is relatively small, the difference in production costs are relatively small.

Q. Is it relatively cheaper to produce wax which conforms to the United States Pharmacopoeia Standard?

A. It is relatively more expensive.

1515 Q. When you were at the Ex-Cell-O Plant, how many containers were there that you weighed there?

A. Twelve containers were weighed from each run.

Q. How long was the run?

A. A run perhaps consisted of one hundred containers.

Q. How many runs did you weigh containers?

A. Three.

Q. So that you weighed thirty-six containers?

A. That is correct.

Q. You weighed them before they were immersed in the paraffin?

A. That is correct.

Q. Were their weights uniform?

A. Within rather narrow limits.

Q. What were the limits?

A. I don't recall.

Q. Do you recall the weight of the containers unparaffined?

A. I do not.

Q. You conducted that experiment to determine the amount of paraffin that adhered to the containers?

A. The test was conducted to determine the suitability of three different waxes for this type of service, in order to duplicate plant conditions it was desirable that the same amount of wax be added to the containers or

1516 to the cartons as is added in actual plant operation or practice.

Q. In the course of your experiment you determined the amount of wax added to the containers?

A. Yes, sir.

Q. Is that amount uniform?

A. I think I stated that it was between 28.6 and 31 pounds per 1000 containers; that is quite uniform.

Q. How did you compute that in terms of per thousand containers?

A. The weighing device is calibrated in terms of one thousand containers.

Q. Do you mean you placed one container on it and you read in terms of per thousand?

A. Read in terms of one thousand, that is correct.

Q. Actually, you tested only twelve with each type of wax?

A. That is correct.

Q. Was that scale also calibrated so that you could weigh the amount of wax adhering to the container, in terms of one container?

A. It can be by dividing it by one thousand, dividing the result by one thousand.

Q. The scale itself?

A. The scale itself is calibrated in terms of one thousand containers and can be read on that scale.

1517 Mr. Rall: Just one question that I should have asked before.

Redirect Examination by Mr. Rall.

Q. You stated on cross examination that this description of paraffin wax with a melting point of 125 to 127 will oxidize at that melting point. I understood you to add: After it had reached the induction point, as you called it, or past the resistance time.

A. That is correct.

Q. And about how long, according to your experiments, would it take paraffin wax, at the temperature of that melting point, 125, to commence the process of oxidation?

A. At what temperature?

Q. At 125.

Mr. Schaefer: I submit, if the Master please, that that question is impossible to answer, because of the witness' prior testimony as to the other factors that have to be taken into consideration.

The Master: Let us see if he can answer.

The Witness: A. There are other tests as well as the one described through which the induction period is determined; one consisting of a bomb, in which the molten wax

1518 is placed, and held at a predetermined temperature, under oxygen pressure, with a gauge to measure the oxygen pressure. When the oxygen pressure, as measured on the gauge, begins to fall, it indicates that the oxygen is being chemically combined with the wax. Until such time it indicates that no oxidation or chemical combination is occurring.

Mr. Rall: Q. Are those tests matters of general knowledge in your field?

A. Yes, sir.

Q. What do those tests show with respect to the, would you say, oxidation coefficient? Is that what you describe as this 15 degree difference?

A. Would you kindly read the question again?

(Mr. Rall's question was read by the reporter as above recorded.)

A. Those tests show that refined paraffin waxes have a reduction period, at 210 deg..es F, at about 20 hours, meaning that under the conditions of that test, with oxygen being under pressure, no oxidation occurs until the passing of 20 hours.

Q. Which is substantially the result obtained in your tests that you described?

A. Yes, sir.

Q. Would this oxygen, being under pressure, form a better contact between the paraffin and the oxygen than the test that you described?

1519 A. Yes, sir, and, in addition, it is pure oxygen, rather than air.

Q. Do you have any way of comparing the conditions of that test with respect to the oxygen getting in or being available to get into the paraffin, comparing that test, and the agitation of the paraffin bath, and the induction of air in the empty container Mr. Schaefer referred to?

A. The bomb tests are generally considered to be more severe than actual conditions in practice.

Q. Because of the fact that the oxygen is pure and that it is fed to the paraffin under pressure?

A. Correct.

Mr. Rall: That is all.

Mr. Schaefer: That is all.

(Witness excused.)

Mr. Gariepy: Mr. Dean, take the stand, please.

Mr. Schaefer: What, do we have another witness now?

Mr. Gariepy: You have raised some question, Mr. Schaefer, concerning this man's knowledge of actual conditions, of the machine and the paraffin and leaving old paraffin and taking it out, so we might as well clear those things up.

Mr. Schaefer: Are we going to go ahead with an 1520 additional witness now?

Mr. Gariepy: This is in connection with the oxidation of paraffin and in connection with the cross examina-

tion of this witness concerning actual conditions and knowledge of actual conditions at the Fielderest plant.

The Master: Cross examination of which witness?

Mr. Gariepy: No, this is Mr. Schaefer's cross examination of Mr. Peterson, who just left here.

The Master: Go ahead.

S. E. DEAN, JR., recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. You are Mr. Dean, president of Fielderest Dairies?

A. That is correct.

Q. You are acquainted with the operation of the Ex-Cell-O machine at your plant in Chemung, Illinois?

A. I am.

Q. And how many quart containers are put through that machine, under ordinary operating conditions, per hour?

1521 A. That machine is rated at approximately 36 per minute. You have shut-downs when you change from one size container to another, and possibly due to some other conditions, I don't know right now what they might be, but we figure we have an average of about 30 containers per minute.

Q. Which would be 1800 per hour?

A. Eighteen hundred per hour.

Q. And how big is the paraffin bath, how many pounds of paraffin does it hold?

A. It holds 110 pounds.

Q. And how do you buy the paraffin? In cakes of what weight and size?

A. The paraffin is cast in molds of eleven-pound cakes or twenty-pound cakes. We use the eleven-pound cakes, because they are easier to handle.

Q. Are you acquainted with the operation of the paraffin bath, with regard to how the cakes are put in and how often they are put in the bath, when the machine is operating?

A. I am.

Q. And how many pounds are put in when the machine starts in the morning on the first one?

A. One hundred and ten pounds, to fill the bath.

Q. And then how long after you fill the bath the first time and you run off, do you put another insertion of
1522 paraffin in the machine for the bath?

A. The Ex-Cello-O machine has a float control attached to the paraffin bath, so that the operator by watching that float control can tell when the paraffin supply is getting low in the tank. In actual operation the machine operator, just from his knowledge of the machine itself, can tell about how often a cake of paraffin is required, and he will look at his float control to justify his own judgment on the thing, and put a cake in. They are needed right through the run, using approximately thirty pounds per thousand containers.

Q. And when you are through with the run, Mr. Dean, or through with the runs during the day, what happens to the machine, with regards to the paraffin bath and the paraffin that is left in?

A. The machine is shut off and we draw off the molten paraffin into a galvanized metal tank or can, whatever you choose to call it. The paraffin bath is sloped on the bottom, so that you get a complete drainage of it, and being in a molten state, of course, there is not much paraffin left, except possibly a little on the sides.

Q. It is cleaned out?

A. It is cleaned out.

Q. And is that done after each running, at the
1523 end of the day?

A. That is correct.

Q. You have observed those conditions at your plant since you have been operating the machine?

A. I have.

Mr. Gariepy: Take the witness, Mr. Schaefer.

Cross-Examination by Mr. Schaefer.

Q. What do you do with the molten paraffin, after you put it in the galvanized tank?

A. Let it cool and we use it over the next day.

Q. How do you get it out of there?

A. We have a plug. You mean, the paraffin out of the tank?

Q. Yes.

A. It is just a square pan and we tip it upside down

and the paraffin falls right out. It is a tank approximately of the same cast as apparently the molds that are used for forming paraffin molds in the paraffin plant.

Q. There would be about 110 pounds of paraffin, wouldn't there, to go into that tank?

A. No. When we get down close to the end of the day's run, naturally we let our paraffin bath go down, in accordance. There is no use melting paraffin just for the
1524 sake of melting it.

Q. So you won't have 110 pounds in it?

A. That is right.

Q. How much will you have in it?

A. I would not be able to tell you exactly. I would estimate 40 pounds.

Q. And you put those into a mold of the size of paraffin molds, as they originally come to you?

A. Approximately the same size.

Q. Those are eleven to twenty pounds, you said?

A. Yes. That is, you can buy paraffin in one of two sizes, eleven or twenty pound cakes.

Q. How do you put approximately 40 pounds of paraffin into this container, which is of the same size and shape as an eleven-pound mold?

A. I would have to describe the paraffin bath to you to enable you to visualize it.

Q. You will not have to describe the paraffin bath to me to enable me to visualize that particular matter. What I want to know is how you get approximately 40 pounds of paraffin into the same size and shape as an eleven-pound paraffin mold.

A. Of course, it is thicker and deeper.

Q. Then it is not the same shape?

A. So far as the outside measurements are con-
1525 cerned. In other words, an eleven-pound cake of paraffin is about, I would judge, fifteen by twenty-five or thirty inches, and it is only about two inches thick. Now, the paraffin chamber which is used in the Ex-Cell-O machine has a door of about, I would say, eighteen inches wide and possibly a foot high. Maybe two inches up from the bottom, at the level of the door, is a series of rollers. You put your cake in there and then the heat is applied, and it melts it enough until it runs down to a stainless steel strainer, and it strains it enough to go into the ultimate bath. There is enough room in there so that we could

place four or five cakes, I should judge offhand, in there, one on top of the other, in loading the machine.

Q. You shut down when you change containers. When else do you shut down the machine?

A. When else?

Q. Yes.

A. If a container should be scored improperly, so that it did not go through the folding operation correctly, it would become jammed in the operation where the bottom is glued together and the machine automatically shuts down and you have a jam.

Q. Where do they usually jam; before the paraffin bath or after?

A. I know of no possible way a container could
1526 jam after the paraffin bath. It is in a continuous chain from then through the machine.

Q. Because at that time it is fully formed?

A. Yes.

Q. The jamming occurs before it gets to the paraffin bath?

A. Yes.

Q. And when that occurs the machine shuts down, is that correct?

A. That is right.

Q. And then what is done?

A. The operator reaches in there and removes the damaged carton and pushes the starting button and she goes on again.

Q. When you shut the machine off or when you have it shut down, that stops the movement of the continuous belt, is that correct?

A. That is correct.

Q. How is your heat furnished to the paraffin bath?

A. Steam.

Q. Does that operate independently of the rest of the machine?

A. That is right.

Q. So that shutting off the machine to remove a jammed container will not affect the supplying of steam to the paraffin?

A. No.

Q. That portion of the machine in which the containers are glued and shaped is enclosed?

1527 A. No.

Q. It is not enclosed?

A. No.

Q. The enclosure begins with the paraffin bath?

A. That is correct. I would like to add this in connection with that paraffin bath operation. When the machine shuts down, you naturally have some cartons which are in various processes of being paraffined at the time. There is a gate, so-called, on the side of the paraffin bath, so that when the machine shuts down for any particular reason the cartons which are in the paraffining operation can be removed and dropped back into the very start of the paraffining operation.

Q. How are they removed?

A. Just by hand.

Q. You reach into the paraffin bath?

A. That is correct.

Q. How do you get those out that are immersed in the paraffin?

A. You don't. You have to turn your machine around, if you want to take those out. Those that are actually in there would not be damaged in the least. They come out of the paraffin dipping part of the tank in baskets and are reconveyed up over the top of the machine in this heated chamber and brought around to complete the circle, and then dropped on a conveyer which takes them through the cooler.

1528 Q. That gate that you open to the paraffin bath permits air to enter that heated chamber that you described, doesn't it?

A. No.

Q. Why doesn't it?

A. Because it is a self-closing door. Theoretically, if there is a vacuum in there, you pull air through it. I think to all intents and purposes there is little if any air getting through there.

Q. The door, being open, would affect the temperature in the heating chamber that you described, obviously, wouldn't it?

A. I think not measurably, Mr. Schaefer, no.

Q. You don't know whether it would be measurably or not, do you?

A. Only from an intelligent survey of a thing like that. I don't know by looking at the thermometer whether it is affected.

Q. The temperature outside is what?

A. Room temperature. It varies from season to season.
Q. Those containers that are taken out of the paraffin bath, you say, are put back in?
A. That is right.
Q. By hand?
A. That is correct.
Q. And then they go back into the paraffin bath?
A. That is correct.
1529 Q. They do not receive uniform application of paraffin with other containers, do they?
A. They receive a double paraffining treatment.
Q. They receive a different paraffining treatment?
A. That is correct.
Q. It may be double or it may not be double, is that correct?
A. I assume probably that is correct. I would like to say one thing.
Q. They may become impregnated with paraffin to a considerably greater degree than containers that go through in the normal course of operation of the machine, is that correct?
A. I would not be able to answer that.
Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. Mr. Dean, during the past year how often have you been to the plant while the machine is in operation, filling milk?
A. Possibly a dozen times.
Q. Have you at any time ever noticed any unusual or offensive odors that might be called rancid odors, about the machine?
A. No.
1530 Q. Have you ever detected anything like that?
A. No.
Mr. Gariepy: That is all.

Recross Examination by Mr. Schaefer.

Q. The paraffin that you take out of the machine when the run is finished at the end of the day is used again the following day?
A. That is correct.

Mr. Schaefer: That is all.
Mr. Gariepy: That is all.
(Witness excused.)
The Master: I would like to ask Mr. Peterson a question.

HOWARD R. PETERSON was recalled as a witness on behalf of the plaintiff, having been heretofore duly sworn, resumed the stand and testified further as follows:

Examination by the Master.

Q. Is there any oxidation which can go on at ordinary temperatures, room temperatures?

A. My previous answer contemplated that, when
1531 I stated that the temperature coefficient of oxidation is 15 degrees. In other words, if the induction period or period during which no oxidation occurs at 210 degrees F is 20 hours, then at 15 degrees less than that, or 195 degrees, it would be 40 hours; at 180 degrees it would be 80 hours; at 165 degrees, it would be 160 hours—I believe that is correct—and continue in that fashion, doubling for each reduction of 15 degrees in temperature, until the solid state is reached.

Q. Let us get down to a practical situation here. Assume now that one of these paraffined paperboard containers had milk in it and is left on the back door step of some apartment and the sun gets to shine on it for several hours, is there any oxidation in the paraffin?

A. There would be in many hundred hours, after many hundred hours there would oxidation occur.

Q. Would there be any, say, inside of six hours?

A. None whatever, sir.

Q. Under a blazing sun?

A. None whatsoever, sir.

The Master: That is all.

Mr. Gariepy: Q. And these 40-hour, 80-hour and 20-hour periods that you refer to means 20 hours of actual exposure to that temperature?

1532 A. That is correct.

Mr. Gariepy: That is all.

Mr. Schaefer: Q. How do you account for the oily feeling that characterizes a paraffined paper container?

A. One of the characteristics of paraffin wax is a distinctive oily feeling. It is not due to the presence of oil, as such, in the wax. In other words, paraffin hydro-carbons of the 24 to 28 carbon atom series have a distinctive oily feeling.

Mr. Schaefer: That is all.

(Witness excused.)

The Master: Are you ready to finish up now?

Mr. Rall: We have depositions, but I think we are agreed, subject to your approval, that Mr. Schaefer will point out on the physical deposition what it is that he is objecting to, and then you can rule into the record, without our having the depositions read orally here, if that meets your approval. We each have copies of them. The originals are on file with you.

The Master: How is he going to indicate right on the face of the deposition? Just write it in in longhand, you mean?

Mr. Schaefer: The objection is already there, I think, in every instance, but how we can indicate your rul-
1533 ings, I do not know, unless we physically X out the question and answer. I could not answer that.

The Master: You can leave it in and I can rule later on when it becomes necessary. You can call attention in your summing up to the objections that you have, so that I can rule on them at the time I come to write my report, if it is necessary. A great many of these objections go to matters that sort of wash themselves out and do not make any difference in the ultimate result.

Mr. Schaefer: I have found that in going over the depositions, so I have just very few objections which I would want to urge to you.

Mr. Rall: Why don't you, for the record now, indicate what those objections are, and after the Master has read the depositions cannot he indicate in the record which are sustained, referring to the page numbers of the depositions?

The Master: Off the record.

(Discussion had off the record.)

The Master: Let the record show that the depositions taken at New York, New York, April 25, 1939, before Irvin Taber, and the depositions taken at Philadelphia, Pennsylvania, April 27, 1939, before Lewis A. Bicking, are
1534 offered in evidence by the plaintiff and received, sub-

ject to the objections attached to the original depositions by the defendants.

Now, I take it that your proofs are closed, Mr. Gariepy.

Mr. Gariepy: Right.

The Master: Then the case is now continued to the date heretofore set.

Whereupon the hearing of the above entitled cause was continued to 10 o'clock a. m., Wednesday, October 11, 1939.

1535 * * (Caption) * *

Wednesday, October 11, 1939,
10 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

1536 The Master: Are you ready to proceed?

Mr. Schaefer: Yes, sir. This witness has not been sworn, Master.

PAUL F. KRUEGER, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. What is your name, please?

A. Paul F. Krueger.

Q. Where do you live, Mr. Krueger?

A. 4914 North Francisco Avenue, Chicago.

Q. And what is your occupation?

A. I am chief sanitary officer of the Chicago Board of Health.

Q. How long have you held that position?

A. About a year and a half.

Q. Was that a Civil Service position?

A. It is, and I am a Civil Service employee.

Q. Prior to the time when you were appointed chief sanitary officer of the Board of Health, what was your position?

A. I was director of the Bureau of Dairy Products of the Chicago Board of Health.

Q. And for how long did you hold that position?

1537 A. I held that approximately two years.

Q. When did you first become associated with the Board of Health of the City of Chicago?

A. I accepted a position of Assistant Director of the Bureau of Dairy Products on a Civil Service appointment in 1928.

Q. Prior to that time what was your occupation?

A. I was milk sanitarian of the State Department of Health at Springfield for a little over two years.

Q. And prior to the time when you were milk sanitarian in the State Department of Health, what was your occupation?

A. I was a foreman in a large milk pasteurization and bottling plant in Chicago.

Q. What were your duties there?

A. I had most of the positions in the dairy, either performed by myself, such as milk bottle washing, operation of milk bottle washing equipment, operation of milk bottle fillers, operation of pasteurization equipment, manufacturing of buttermilk, washing and cleaning of equipment, and all of the positions, or practically all of the positions in the institution, and then afterwards was foreman, directing men doing that work in the establishment.

1538 Q. Prior to the time when you were employed in that dairy, what was your occupation?

A. I was instructor in a hig school township high school, at Sesser, Illinois.

Q. For how long did you teach at that high school?

A. One year.

Q. What subjects did you teach?

A. I taught science, agriculture, drawing.

Q. Did you attend any college, Mr. Krueger?

A. Yes. I am a graduate of the University of Illinois, College of Agriculture, at Urbana, Illinois, graduating there in 1923 with final honors.

Q. What degree did you receive?

A. Receiving a B. S. degree, Bachelor of Science.

The Master: Q. What do you mean by final honors?

A. They have preliminary honors and final honors.

Mr. Schaefer: Q. Have you written any articles which have been published pertaining to the sanitary aspects of the production, processing and distribution of milk?

A. Yes, I have written a number of articles.

Q. Where were they published?

A. They were published in the Illinois Health News, Illinois Journal of Medicine, the annual reports of the International Association of Dairy and Milk Inspec-
1539 tors, in the Journal of Milk Technology and in the Journal of the American Public Health Association.

Q. To what did those articles pertain?

A. Those articles pertained to the inspection of milk supplies, the operation of a mobile milk laboratory, the pasteurization of milk, the use of phospatase tests to determine proper pasteurization of milk, the proper construction of milk pasteurization equipment and the development of high temperature short-time pasteurization.

Q. Are you a member of any societies or associations of public health officials?

A. I am a member and past president of the International Association of Dairy and Milk Inspectors, now called the International Association of Milk Sanitarians, and a member of the American Public Health Association.

Q. What were your duties as milk sanitarian with the State Department of Health?

A. I had charge of all of the milk inspection activities of the State Department of Health, helping cities and communities in the state in the passage of milk supervision legislation, and directly in charge of the milk pasteur-
1540 ization plant law of Illinois, which requires that all milk pasteurization plants in the state meet certain requirements, which included the promulgation of the necessary requirements for those plants and the actual inspection of those plants.

Q. What is the Milk and Milk Products Sanitation Advisory Board of the United States Public Health Service?

A. The Milk Products Sanitation Advisory Board is a board of sixteen men selected from various parts of the United States by the Surgeon General of the United States Public Health Service, to assist the Service in drawing up suitable milk control regulations for use in communities of the United States and to assist in other problems in connection with the proper handling of milk and milk products.

Q. Are you a member of that board?

A. I am.

Q. For how long have you been a member?

A. Approximately three years.

Q. What are your duties as chief sanitary officer of the Board of Health of the city of Chicago?

A. My duties are to enforce the ordinances and regulations of the city of Chicago and the Board of Health with respect to the inspection and supervision of Chicago's
1541 milk supply and food supply and the enforcement of ordinances and regulations with respect to the proper installation of plumbing, ventilation, in establishments in the city of Chicago, and proper maintenance of community sanitation in the city.

Q. How is the Bureau of Milk Sanitation of the Board of Health of the city organized?

A. It is divided into two divisions, the country dairy inspection division and the city dairy inspection divison.

Q. What is the function of the country dairy division?

A. The function of the country dairy inspection division is to inspect each one of the thousands of farms that supply the city of Chicago with milk and milk products, and to inspect the receiving stations and milk plants outside of Chicago which receive milk and sell it in Chicago, to insure the proper compliance with all of the ordinances of the city of Chicago and rules and regulations of the Board of Health pertaining to such establishments.

Q. What is the function of the city dairy inspection division?

A. The city dairy inspection division inspects all of the milk pasteurization plants which sell milk to the city
1542 of Chicago and the collection of samples of milk and milk products from those establishments, and as it is sold, and the inspection of—oh, I think that covers it.

Q. Do they inspect the pasteurization equipment in those plants?

A. A routine inspection is made of the pasteurization plants as to the proper construction of the plants to conform to the necessary requirements, the inspection of the equipment in those plants, the operation of such equipment, the health of the employees in the plants and the proper delivery and distribution of the milk.

Q. What is the procedure employed by the Board of Health with respect to the inspection of the bottle washing equipment of milk plants in which milk is bottled?

A. The inspectors visit regularly each milk pasteurization and bottling establishment in the city. Those inspections are made once or twice a week, but at least every two.

Q. What do they do at those plants?

A. They inspect the operation of the equipment used for

washing and disinfecting the milk bottles. They take the temperatures of the various solutions used. If it is
1543 water, hot water, they get the temperature of the hot water and the temperature of the alkali solutions, make the necessary tests to see that they are made of the strengths of alkali solutions used and the chlorine solutions, if they are used, and inspect the proper mechanical construction and operation of the bottle washing equipment in use.

After they have made their inspection of that equipment and operation, they take, at various intervals, approximately one month apart, an empty milk bottle that has been washed and disinfected, taken at random, a milk cap is placed on the bottle by the inspector, and he also places on the bottle a printed number, which is furnished to him by the office.

He then makes out, in triplicate, a sample receipt stub, on which he places the name of the dairy, the address of the dairy and, generally, the owner or manager of the establishment.

He indicates on this sample receipt stub where the sample was collected, places on it his own name or his number that he goes by, the date that the sample was collected and the time of the day the sample was collected, the name of the person who was in attendance at the plant at the time the sample was collected, places on that stub a
1544 number corresponding to the printed number that he placed on the bottle and indicates on the stub what examination is to be made.

He then takes that empty bottle to the Board of Health laboratory and places it in the ice box of the milk bacteriological control room of the Board of Health laboratories and makes out a white bacteriological laboratory card, on which he places the statement that it is an empty bottle, generally the size of the bottle, where it was secured, places his own name on it, on the white card, and a statement as to what examination is to be made of that sample.

He then stamps the card with a time stamp provided for that purpose and places the card into a small box in the bacteriological laboratory for that purpose.

An examination is then made, a bacteriological examination is then made of the empty milk bottle, by means of a rinse test, in accordance with standard methods, and the results of that test are then placed on this white laboratory

card by the bacteriologist, who indicates the number of colonies he has found and the results of the examination, together with his name or initials, and he then time-
1545 stamps it and forwards this card to the director of the laboratories.

The card is then sent to the dairy products division, where a clerk enters the results of the examination on to the sample receipt stub which has been turned in to the Bureau of Dairy Products previously by the inspector with his daily time card, the time the sample was taken, and a copy of that result is forwarded to the inspector and the original of this stub is sent to another clerk, who enters the findings on a panel card kept in the Bureau of Dairy Products of each dairy's results, and then the stub is sent to the file, to be placed in a file of that particular dairy.

Q. In the event that the bacteriological examination would reveal a bacterial content in excess of that permitted by the ordinance, what, if anything, would be done by the Board of Health?

A. Notification is sent to the dairy concern of the results of the examination, and notification has been sent to the inspector, with this duplicate that he has made, that I previously described, and on which is stamped a request that a retest be made.

The inspector then goes out to the plant to immediately determine the cause of the high count and to see that such standards are maintained, both the equipment oper-
1546 ation and the construction, or that compliance is secured.

Mr. Schaefer: Mr. Reporter, will you mark this Defendants' Exhibit 8 for identification, and this Defendants' Exhibit 9 for identification.

(The documents referred to were thereupon marked by the reporter Defendants' Exhibits 8 and 9, respectively, for identification.)

Mr. Schaefer: Q. I show you a pink slip, which has been marked Defendants' Exhibit 8 for identification, which purports to be a form used by the Board of Health, Bureau of Dairy Products. Can you state what that form is?

A. This is the form that I have just been speaking about, and termed a sample receipt stub. This is the original, being a pink slip of that form.

Q. That is the form which you refer to as being prepared in triplicate?

A. That is right.

Q. By whom is that prepared, and when?

A. It is prepared by the inspector at the time of taking the sample.

Q. I call your attention to an entry stamped on that card, which reads, "Less than 50 bacteria per bottle." Will you explain that entry, please?

1547 A. That is the standard form that the Board of Health uses in reporting the results of analysis to the plants when the bacteriological examination shows the absence of any bacteria in that bottle.

The reason for that terminology is that in making a standard analysis under the rinse test 100 cc's of water are used, of which two cc's are plated out, and when no colonies grow on either one of those cc's it is marked "No growth," or zero number of colonies, but we report it as less than fifty, rather than sterile, because we have examined only two cc's of 100 cc's.

Q. Now, I show you a card which has been marked Defendants' Exhibit 9 for identification, which purports to be a card used in the bacteriological and chemical examination of milk by the Board of Health of the city of Chicago. Will you state what that card is?

A. That is the card that I referred to a few minutes ago as the white laboratory card made out by the inspector and turned in with the sample of empty bottle. I neglected to state, I believe, when I spoke about the entries he placed on the card, that he also places the number on this card corresponding to the number
1548 that he placed on the bottle at the time he collected the sample.

Q. On that card does there appear an identification of the plant from which the bottle was secured?

A. There is nothing on this card to indicate from what plant the bottle was secured. It is merely state "Pasteurizing plant."

Q. In the normal practice of the Board, is there any notation made on those cards as to the identification of the dairy from which the sample was secured?

A. There is never any notation placed on the cards as to the name of the company from whom samples were secured.

Mr. Schaefer: I offer those in evidence.

Mr. Gariepy: No objection, Master.

The Master: They may be received.

(Said documents, being a sample receipt stub of the Board of Health and white laboratory card, respectively, so offered and received in evidence, were marked DEFENDANTS' EXHIBITS 8 and 9, and are attached hereto and made a part hereof.)

Mr. Schaefer: Q. Mr. Krueger, have you personally examined the records of the Board of Health in the years 1937, 1938 and for the first nine months of 1939, with respect to the results of bacteriological ex-
1549 amination of milk bottles.

A. Yes, I have.

Q. As a result of that examination of those records, have you prepared a tabulation showing the number of bottles examined and the result of the examination?

A. Yes, I have.

Mr. Schaefer: Mark this Defendants' Exhibit 10 for identification, please.

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 10 for identification.)

Mr. Schaefer: Q. I show you a document which has been marked Defendants' Exhibit 10 for identification. Will you state what that is?

A. This is a tabulation of the bacterial content of all empty milk bottles examined by the Board of Health of the city of Chicago during the years 1937, 1938 and the first nine months of 1939, that I was able to find in the files of the Board of Health.

Mr. Schaefer: Will you mark this document, Mr. Reporter, Defendants' Exhibit No. 11 for identification.
1550 (The document referred to was thereupon marked by the reporter Defendants' Exhibit 11 for identification.)

Mr. Schaefer: Q. I show you a document which has been marked Defendants' Exhibit 11 for identification, Mr. Krueger. Will you state what that is, please?

A. This is a record of the bacterial content of empty one-quart milk bottles examined by the Board of Health of the city of Chicago during the years 1937, 1938 and the first nine months of 1939, and including all of the quart-bottle records I was able to find in the files of the Board of Health.

Mr. Schaefer: Mr. Reporter, will you mark this Defendants' Exhibit 12 for identification?

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 12 for identification.)

Mr. Schaefer: Q. I show you a document which has been marked Defendants' Exhibit 12 for identification. Will you state what that is, Mr. Krueger?

A. This is the same tabulation as I previously described for quart bottles, excepting that this includes all of the pint bottles.

Mr. Schaefer: Will you mark these, Mr. Re-
1551 porter, as Defendants' Exhibits 13, 14 and 15 for identification?

(The documents referred to were thereupon marked by the reporter Defendants' Exhibits 13, 14, and 15, for identification.)

Mr. Schaefer: Q. I show you a document which has been marked Defendants' Exhibit 13 for identification, Mr. Krueger. Will you state what that is?

A. That is the same tabulation that I described for quart bottles, excepting this represents all of the one-third quart bottles.

Q. And I show you Defendants' Exhibit 14 for identification. Will you state what that is?

A. This is the same tabulation as I described for quart bottles, excepting that it includes all of the one-half of pint bottles.

Q. And I show you Defendants' Exhibit 15 for identification. What is that?

A. In making up this tabulation and breaking it down into the various sized containers, I used, wherever possible, the laboratory record cards, and then matched those up with the pink sample receipt stubs, and in some cases, particularly for the year 1937, we found white cards, laboratory cards, but did not find the corresponding
1552 pink stubs, because normally we do not keep our records more than two years, and occasionally some are misfiled, and there were some that we were not able to find a pink record on.

In some of those cases we did not know the size of the container, but we did know that there was a violation, in view of the fact that where there had been a violation the clerk who placed the results of the examination on the sample receipt stub, after the examination had been made, would indicate a violation by running a red line underneath the results on that card.

This is a tabulation of those samples, and is marked "Size of bottle unclassified," so we are thus including

in our tabulation all of the results of the samples that we found.

Q. Now, referring to Defendants' Exhibit 10 for identification, again, in your opinion does the report of examinations of empty glass bottles made by the Board of Health, as reported on that exhibit, fairly show the actual bacteriological condition of glass bottles used for the distribution of milk in the city of Chicago?

A. Yes, it does.

Q. In the making of examinations of empty glass bottles to determine their bacteriological condition
1553 and in reporting that condition on the cards to which you have referred, is any distinction made with respect to the volume of milk distributed by the dairy whose bottle is being examined?

A. No? This report does not show a—

Mr. Gariepy: I object to the last part, Master. He answered no, and I think that is responsive. He asked him if these was any distinction and he said no.

The Master: Overruled. Finish your answer.

Mr. Schaefer: Q. You may answer, Mr. Krueger.

A. No, it does not, because the samples are collected by each inspector, approximately one sample from each milk plant each month. That may be a little over a month in some cases or a little bit under, but roughly that is approximately what they try to get, and it does not make any difference whether the plant is handling three or four hundred thousand bottles a day or three or four hundred bottles a day. Just one bottle is selected from each establishment.

In addition, whenever a sample empty bottle is found to contain a number of bacteria above the limit, or even close to it, the inspector goes back to the plant and takes more samples, so that this would represent our taking of more samples from those where the operation may not be
1554 as good as it would be in some other plants.

The larger plants, almost all of them, have a very extensive laboratory checking of their own, in which they take empty bottles themselves almost daily and watch that very closely, so that this will probably represent more samples from these smaller concerns, where the total number of bottles would be in a very small proportion.

Q. Generally speaking, is the same type of bottle washing and disinfecting equipment used in the larger plants as in the smaller plants?

A. No: The larger plants, almost all of them, use the soaker type method of bottle washing. Half of the plants, or approximately half of the plants in the city of Chicago, use that method of bottle washing, which represents about 95 or 96 per cent of the supply of milk, while the other half of the plants, in number, generally use hand washing facilities or hand and small mechanical devices combined, which, although they represent half in number, only represent about four per cent of the total quantity of milk.

Q. In your opinion, can an accurate analysis of the condition of the glass bottles used throughout the city of Chicago be secured without giving weight to the tabulation of the volume of distribution of each dairy whose
1555 bottle is examined?

A. No, it could not, for the reason that this tabulation represents all of the bottles that we pick up, and we make no effort to weigh them in any way, as would have to be done if that condition were to be determined.

Mr. Schaefer: I offer in evidence Defendants' Exhibits 10, 11, 12, 13, 14, and 15.

The Master: They may be received.

(Said documents, being tabulations showing bacterial content of empty milk bottles examined by the Board of Health of the city of Chicago during the years 1937, 1938 and the first nine months of 1939, and being, respectively, DEFENDANTS' EXHIBIT 10, totals of all bottle sizes, DEFENDANTS' EXHIBIT 11, one-quart bottles, DEFENDANTS' EXHIBIT 12, one-pint bottles, DEFENDANTS' EXHIBIT 13, one-third quart bottles, DEFENDANTS' EXHIBIT 14, one-half-pint bottles, and DEFENDANTS' EXHIBIT 15, unclassified bottles, were received in evidence, marked as indicated and are attached hereto and made a part hereof.)

Mr. Schaefer: Q. What instructions, if any, have you caused to be given to inspectors of the Board of
1556 Health during the year 1939 with respect to procuring the samples of paper containers used in the distribution of milk in the suburbs?

A. I gave instructions to the head of the city milk division and the supervisors to have samples of paper milk bottles collected and brought into the laboratory for analysis.

Q. Do you know whether or not those instructions were complied with?

A. They were complied with, yes.

Mr. Gariepy: When? Did he say when he did it?

Mr. Schaefer: Q. When did you give those instructions?

A. During the year 1939. I believe we started early in the year.

Q. Are you familiar with the provisions of the United States Public Health Service Standard Milk Ordinance and Code?

A. I am.

Q. For how long have you been familiar with those provisions?

A. For the last five years or more.

Q. Prior to the June, 1939, meeting of the Public Health Service Milk and Milk Products Sanitation Advisory Board, what reference, if any, was made to the
1557 use of single-service paper containers for the distribution of milk and milk products in the United States Public Health Service Standard Milk Ordinance and Code?

A. There was no reference of any kind to the use of paper milk containers.

Mr. Schaefer: Mr. Reporter, will you mark this Defendants' Exhibit 16 for identification, please?

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 16 for identification.)

Mr. Schaefer: Q. I show you a document which has been marked Defendants' Exhibit 16 for identification, and which purports to be a copy of Section 10 of the United States Public Health Service Standard Milk Ordinance, as it existed prior to the June, 1939, meeting of the Public Health Service Sanitation Advisory Board. Will you examine that document and state whether or not it is an accurate copy of Section 10 as it existed prior to that meeting?

A. Yes, it is. It is a copy of that.

Q. Have you checked that with the original ordinance, Mr. Krueger?

A. Yes, I have.

Mr. Schaefer: Will you mark this, Mr. Reporter,
1558 Defendants' Exhibit No. 17, please?

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 17 for identification.)

Mr. Schaefer: Q. I show you a document which has

been marked Defendants' Exhibit 17 for identification, and which purports to be a copy of Section 10 of the Public Health Service Milk Ordinance, as amended at the June, 1939, meeting of the Public Health Service Sanitation Advisory Board, and as will appear in the 1939 printed United States Public Health Service Milk Ordinance. Will you examine that document and state whether or not it is a correct copy of Section 10 of the United States Public Health Standard Milk Ordinance as it will appear in the 1939 printed Health Service Ordinance and Code?

A. This is a copy of what I have been informed will be printed in the 1939 printed Public Health Service Milk Ordinance and Code.

Q. By whom were you so informed?

A. By the United States Public Health Service.

Mr. Schaefer: Off the record.

(Discussion had off the record.)

Mr. Schaefer: I offer Defendants' Exhibits 16 and 17 in evidence.

1559 Mr. Gariepy: No objection.

The Master: They may be received.

(Said documents, being copies of Section 10 of the United States Public Health Service Milk Ordinance and Code as adopted before and after June, 1939, respectively, so offered and received in evidence, were marked DEFENDANTS' EXHIBITS 16 and 17, and are attached hereto and made a part hereof.)

Mr. Schaefer: Q. Mr. Krueger, have you made an examination and determination of the results of bacteriological examinations conducted by the Board of Health with respect to milk bottles used at the Ogden Dairy Company, 4333 Ogden Avenue, Chicago, Illinois, in the years 1937, 1938, and for the first nine months of 1939?

A. I have, and including all of the samples that I know of to date.

Q. You mean some samples also in October?

A. That is right.

Mr. Schaefer: Mr. Reporter: will you mark this Defendants' Exhibit 18 for identification, consisting of nine pages.

(The document referred to was thereupon marked by the reporter as requested.)

1560 Mr. Schaefer: Q. I show you a document which has been marked Defendants' Exhibit 18 for identifi-

cation, and which consists of nine pages. What is that document?

A. This is a tabulation of all of the samples of empty milk bottle results, samples taken and the results of the bacteriological examination of such bottles for the years 1937, 1938 and 1939.

Q. What does the left-hand column of that exhibit indicate?

A. The left-hand column gives the dairy products sample number which was placed on the bottle at the time it was picked up, a stub for which was made out and is the number which we carry on our records as the sample number.

Q. And what do the entries in the column headed "Date Coll." represent?

A. That represents the month, day and year that that particular empty bottle sample was collected.

Q. And the entries in the next column headed, "Collected by" indicate what?

A. That is the name of the inspector or supervisor who picked up the sample.

Q. And the entries in the next column headed "source" indicate what?

1561 A. That is the place where the empty bottle was picked up.

Q. And the entries in the column headed "Container" indicate what?

A. That represents the size of the bottle that was collected.

Q. And the entries in the last column, headed "Bacterial Count and Bacteriologist" indicate what?

A. That gives the results of the bacteriological examination of the empty bottle and the name of the bacteriologist who did the work.

Q. Do you have with you, Mr. Krueger, the original pink slips, similar to Defendants' Exhibit 8, and the laboratory cards, similar to Defendants' Exhibit 9, covering the inspections reported in Defendants' Exhibit 18?

A. I do for all but four samples collected in 1938, where I was unable in a short time to find either the white card or the pink slip. However, those four samples, which were indicated on the second sheet as sample Nos. 8227, 8254, 8271 and 13247, were taken from the panel card of the particular dairy, the Ogden Dairy Company.

Those were included even though I did not have the white cards, because I wanted to get all the results
1562 in that record that it was possible for me to find.

Q. Now, in the normal course of business at the Board of Health when are entries made on the panel card which you described and from what source are those entries made?

A. The entries on the panel cards are made from the pink inspector's receipt stub and are made directly after the clerk has indicated the results thereon from the white laboratory cards and immediately before those pink receipt slips are sent to the files.

Mr. Schaefer: I offer Defendants' Exhibit 18 in evidence.

Mr. Gariepy: With regard to the Defendants' Exhibits 8 to 18, I take it that if we ask with regard to the dates on which those are made, the original records are open to our inspection?

Mr. Schaefer: All of the original records pertaining to any of these exhibits are open to your inspection. I have the cards here with respect to this exhibit. If you want to examine them, you can do it. They are back here.

Mr. Gariepy: All right.

The Master: Exhibit No. 18 may be received and marked.

1563 (Said document, consisting of nine pages, being a tabulation of results of bacterial examinations conducted on milk bottles used at Ogden Dairy Company, so offered and received in evidence, was marked DEFENDANTS' EXHIBIT 18, and is attached hereto and made a part hereof.)

Mr. Schaefer: Q. Mr. Krueger, do you know what treatment, if any, is given by dairies in the city of Chicago to bottles which are delivered to those dairies by the Bottle Exchange?

A. The bottles delivered to the dairies from the Bottle Exchange are treated by the plant the same as are all other bottles. They are all washed and sterilized in the milk plants.

Mr. Schaefer: Cross-examine.

The Master: Let us have a short recess, first.

(A short recess was here had, after which the proceedings were resumed as follows:)

The Master: Let us proceed.

1564 *Cross-Examination by Mr. Gariepy.*

Q. Mr. Krueger, you were asked on direct examination concerning the provisions of the milk ordinance and code as recommended by the United States Public Health Service prior to June, 1939. Are you familiar with those provisions previous to that date?

A. Yes, I am.

Q. I show you a document, which purports to be a bound copy of the milk ordinance and code represented by the United States Public Health Service, dated January, 1939, and call your attention to page 95 thereof, Item 12-p. Will you read that item and tell me whether you knew anything about the existence of that previous to today?

A. Yes.

Q. Was that in the ordinance previous to June, 1939?

A. What part of it did you refer to?

Q. The item underlined under Item 12-p, all underlined. Will you read it for the record?

A. "All milk and milk products containers and equipment, except single-service containers, shall be thoroughly cleaned after each usage. All containers shall be subjected to an approved bactericidal process after each cleaning and all equipment immediately before each
1565 usage. When empty and before being returned to a producer by a milk plant each container shall be effectively cleaned and subjected to bacteridical treatment."

Q. And the words "single-service containers" in the second line thereof refer to paper milk bottles, doesn't it?

A. Well, I would assume that, yes.

Q. Calling your attention to page 99 of this same book, milk ordinance and code, Item 15-p, entitled "Storage of Caps, Parchment Paper, and Single-Service Containers," were you familiar with the fact that that was in the January, 1939, code, previous to June, 1939?

A. Yes.

Q. Will you read that section, Item 15-p?

A. "Milk bottle caps or cap stock, parchment paper for milk cans, and single-service containers shall be purchased and stored only in sanitary tubes and cartons, respectively, and shall be kept therein in a clean dry place."

Q. Then there was, Mr. Krueger, some acknowledgment with regard to the existence and use of single-service

containers prior to June, 1939, in the United States Public Health Code, was there not?

A. There were no regulations designed particu-
1566 larly to govern the production of paper containers in the code.

Q. But your reference on direct examination, or statement, rather, that there was no reference to the single-service container in the code was not correct, was it?

A. In my answer I had reference to the fact that there were no definite requirements drawn up for those paper containers, inasmuch as the matter had been brought to the attention of the Board at its meeting in 1938, at which time it was decided not to draw up any regulations for those milk containers, inasmuch as insufficient information was available concerning them, their production, their safety and other factors that entered into it, particularly the fact that they were porous and that it was possible for paraffin to get into the milk from them in their use.

Q. Are you acquainted with this suggestion of October 7, 1937, which refers to Section 10, of the United States Public Health Service, which Mr. Schaefer showed you and with regard to the other provisions of the United States Public Health Ordinance?

A. Yes. That letter was received a few days ago by the Board of Health.

Q. Referring to a photostatic copy of a letter
1567 dated October 6, 1939, on United States Public Health Service stationery, signed by Walter N. Dashiell, is that right?

A. Yes.

Q. Attached thereto, under the same date, Section 10 of the United States Public Health Service Ordinance, is that right?

A. That is right.

Q. Are you acquainted with this paragraph, reading: "The use of standard milk bottles or single-service containers for delivering milk and milk products in quantities less than one gallon is required in order to prohibit delivery in such containers as buckets, fruit jars, etc., which may be difficult to wash and to subject to adequate bactericidal treatment, which cannot be filled and canned with the proper equipment used for these purposes, and which it is often difficult to label properly."

That is part and parcel of this suggestion under Section 10, is it?

A. That is part of the code under that section, yes.

Q. Are you acquainted, Mr. Krueger, with any action taken by the State Department of Health with re-
1568 gard to the use of single-service containers in the State of Illinois?

A. I am not familiar with what they require on that.

Q. Are you acquainted with the fact as to whether they prohibit their use or not?

A. So far as I know, they do not prohibit their use, no, sir.

Q. Do you know, as a milk sanitarian, the commissioners of health of the cities such as New York, Philadelphia and Detroit?

A. Well, I know of those commissioners, yes.

Q. Do you consider those commissioners competent, efficient health commissioners?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Do you know whether the single-service container is used in those cities or not, Mr. Krueger?

Mr. Schaefer: Objected to.

Mr. Gariepy: He is on here as an expert milk sanitarian.

The Master: I will let him answer.

The Witness: Will you read the question, please?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

1569 The Witness: A. What were the names of the cities?

Mr. Gariepy: Q. Detroit, Philadelphia, New York City.

A. I understand that they are being used in those cities, yes, sir.

Q. Do you know how many cities in the United States are using the single-service container for the sale of fresh fluid milk at this time?

A. No, I do not.

Q. If I told you that 485 cities were using them and included in those 485 were three of them at the present time operating under the United States Public Health

Service Code, namely, Winnetka, Louisville, Kentucky, and Phoenix, Arizona, would you be surprised?

Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: Q. Do you know that, Mr. Krueger?

Mr. Schaefer: That is objected to.

The Master: Yes.

Mr. Gariepy: Q. Do you know that those three cities use them?

A. I don't know.

Q. You don't know that?

A. No, sir.

Q. Mr. Krueger, how many dairies are there in 1570 the city of Chicago permitted to sell milk?

A. There are approximately 140 milk pasteurization plants.

Q. And from those or from those dairies in making these inspectors that you referred to you have been taking bottles and performing the standard rinse test, is that right?

A. Yes, sir.

Q. On Exhibit No. 11, for the year 1937, how many sample bottles did you take for that year from 140 dairies?

A. Exhibit 11 shows the number of one-quart bottles taken from various dairies.

Q. How many did you take?

A. And for the year 1937 there was a total of 423 quart bottles taken.

Q. From the 140 dairies?

A. Yes, sir.

Q. And how many quart bottles or other glass bottles were taken in the year of 1938 from the 140 dairies, on which bottles you performed tests?

A. The number of quarts and all other size bottles taken was 1484 bottles in the year 1938.

Q. Do you know how many you took from each of the respective 140 dairies during that year?

A. No, I do not, no, sir, not from each individual 1571 dairy, no.

Q. And for the year 1939, or the first nine months thereof, how many sample bottles did you take from the 140 dairies?

A. Well, we took a total of 1144 bottles.

Q. In nine months?

A. In the first nine months of 1939.

Q. And how many of those were taken from the Ogden Dairy, as shown on Exhibit No. 18?

A. One hundred and thirty-seven bottles were taken from them in 1939.

Q. And how many of those were taken subsequent to September 1, 1939?

A. One hundred and thirty-three bottles were taken since the first of September, 1939.

Q. Out of the entire 137 that were taken in the year 1939, or the first nine months thereof?

A. That is right.

Q. Mr. Krueger, did you ever have occasion in the year 1937 to go to Champaign, Illinois, with Dr. White of the bacteriology department of the Board of Health, to inspect the single-service paper containers and the Ex-Cell-O machine down there in the custody of the Department of Dairy Husbandry?

A. I made a trip to Urbana.

1572 Q. Do you know Dr. Paul Tracy?

A. I do.

Q. Did you meet him on any occasion in 1937 when Dr. White made the trip with you there?

A. Yes, I did.

Q. Did you have any conversation with him concerning the results of his experiments on said machine and the containers at that time?

A. Yes, I did.

Q. Do you remember what your conversation was?

Mr. Schaefer: That is objected to.

The Master: Off the record, please.

(Discussion had off the record.)

The Master: You are objecting on the ground that this is not proper cross examination?

Mr. Schaefer: Yes, sir. On that ground, and on the additional ground that any conversation between Mr. Krueger and Professor Tracy is immaterial.

Mr. Gariepy: My answer to that is that we have a witness who is interested in this litigation, who is a member of the Board of Health, so to speak, concerning the milk division and the matter of public health, and we ought to be able to go into the matter of his interest and his acts and his contacts with relation to the single-service con-

tainer here, especially in view of the fact that we
1573 have stipulated that since January, 1936, the plaintiff made application for the use of these containers from the city and that such use was not granted up to February 6, 1939, the time of filing suit, and that this man, in the milk division has charge of dairies and the inspection of dairies and the sanitary conditions of bottles. I think it is certainly pertinent and proper that he be asked on some of these matters.

The Master: I will sustain the objection on the ground that there is nothing in the direct examination to which this question pertains.

Mr. Gariepy: And also on the ground of interest, Master, you sustain the objection there?

Mr. Schaefer: What is that? There hasn't been any objection on the ground of interest.

The Master: I have sustained the objection on the ground of not being cross examination or at least not pertaining to anything brought out on the direct examination.

Mr. Gariepy: Q. Did you ever make any statement to Dr. Tracy concerning releasing any reports with respect to his research work on the Ex-Cell-O machine and the single-service container in the year 1937, when you
1574 made trips there?

Mr. Schaefer: That is objected to for the same reason.

The Master: The same ruling.

Mr. Gariepy: Q. Do you also obtain in the Department of Health and in your milk division bacterial counts on milk in glass containers?

A. What was that question?

Mr. Gariepy: Read it.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. Yes, we take routine samples of our milk supply.

Q. I show you Plaintiff's Exhibit 4, which has been offered and received in evidence, and ask you if you ever saw that document before, Mr. Krueger, handing document to the witness)?

A. Yes, I believe I have seen most of the material in there.

Q. Are you acquainted with the signature of Lloyd Arnold on page 6 thereof, in ink?

A. Yes, I am.

Q. Are you an instructor on the University of Illinois staff, an instructor on public health and bacteriology under Dr. Arnold, at the University of Illinois?

1575 A. Yes, I am.

Q. And how long have you been such?

A. For the last two years.

Q. How many instructions or lectures have you given at the University of Illinois to the students?

A. I imagine about four or five lectures.

Q. Are those lectures free from you or are you paid for them?

A. I receive no compensation of any kind for them.

Q. What did you do with this document, Plaintiff's Exhibit 4, when you first saw it, Mr. Krueger?

Mr. Schaefer: That is objected to as not proper cross-examination.

The Master: Sustained.

Mr. Gariepy: Q. When did you first learn, Mr. Krueger, that the plaintiff, Fielderest Dairies here, had made an application to the Department of Health of the city of Chicago for—

Mr. Schaefer: That is objected to.

Mr. Gariepy: Wait a minute until I finish my question.

Q. (Continuing.) —with regard to the use of single-service containers in this city for the sale of fresh fluid milk?

Mr. Schaefer: Objected to, for the same reason.

1576 The Master: The same ruling.

Do you have any question here as to the accuracy of these statistical matters and the statements made by this witness as to the routine of his department?

Mr. Gariepy: We went into that part already, but is the Master trying to foreclose me from showing the interest of this witness and his position and actions with regard to the plaintiff's application?

The Master: The only relevancy the questions concerning his interest would have would be to attack his credibiity as a witness regarding the matters that he testified about, and, as I recall, the only thing he testified about were the results of some inspections made at various places and a description of the routine of his department. Now, then, I cannot see what effect any questions concerning

his general interest are going to have on the testimony that he gave.

Mr. Gariepy: All right. If I get the Master clear, it is the Master's position that I am foreclosed from asking this witness any questions, except to cross-examine on those questions as to which Mr. Schaefer asked him on direct, concerning Exhibits 8 to 18, covering tests on
1577 glass bottles in 140 dairies in the city of Chicago. That is exactly all he testified to.

The Master: All right. Now, I am asking you the question whether you contend in any way that the testimony that he gave concerning the routine of the inspections is to be attacked by you. That is all. Do you contest that or not?

Mr. Gariepy: Well, I think the evidence so far as given by the defendant on direct and cross-examination shows an unusually small number of bottles examined during the period of three years, from 140 dairies, over that course of time, and showing 133 tests of bottles out of 137 since September, when there was anything brought in in this lawsuit concerning a certain Ogden Dairy and the conditions of bottling at that dairy. I think that evidence has been brought out here and it speaks for itself.

Q. Now, Mr. Krueger, do you know about the operation of the soaker washing machine that you mentioned in your direct examination?

A. I know about that type of machine, yes.

Q. Is there any guide or thermometer on that soaker washing machine which washes these glass bottles and which you say is used in 95 per cent of the dairies
1578 operating in the city of Chicago, that indicates the alkali strength or the strength of the washing solution as it is used and passes over the glass bottles in the washer?

A. I did not say that machine is used in 95 per cent of the plants. I said that the plants that use them handle about 95 per cent of the supply sold.

Q. All right, take it your way. The plants that supply 95 per cent of the milk sold in the city of Chicago are using the soaker washer?

A. That is right.

Q. Do you know now whether there is any guide, mechanical guide, thermometer, that indicates on said soaker washer the alkali strength of the solution that is used when the bottles are being washed?

A. There are thermometers on those machines, but they

are merely used to determine the temperature of the soaking solutions, and, as far as the strength of the alkali that they use is concerned, those tests are made by taking samples from the tanks and running them through chemical apparatus, in making a chemical test.

Q. But whether the solution is strong with alkali or whether it is not strong, or whether it is weak, you do not know, until you take a sample out of the washing
1579 fluid itself, is that right?

A. We can determine that either by watching the amount of sodium hydroxide or other alkali that is placed in the tank, or by means of the test itself. The common method is by use of the test.

Q. The test on the glass bottle?

A. The test of the alkali solution in the washer. Each plant that uses a soaker type washer has the equipment for making those tests and makes those tests routinely and periodically under the supervision of our own inspection.

Q. Mr. Krueger, do you have anything to do with the matter of checking up on other containers that are used in the city of Chicago, that are referred to in Section 3094 of the Municipal Ordinance here?

A. I don't know just what you refer to.

Mr. Gariepy: Let me take the ordinance, Mr. Schaefer.

The Master: What other containers are you referring to?

Mr. Gariepy: Q. Showing you, Mr. Krueger, Section 3094, and with special reference to the last four lines, which read: "Provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants and similar establishments from dispensing milk or milk products from sanitary
1580 dispensers approved of by the Board of Health."

A. Yes, sir, that comes under my supervision, also.

Q. And what containers have you approved of as coming under your supervision with regard to this Section 3094, in the lines I have just read?

Mr. Schaefer: That is objected to.

The Master: What does that have to do with the direct examination here?

Mr. Gariepy: This ordinance speaks for itself, showing that they have a right to approve certain containers, and I am asking him what containers they approved. They failed to approve the plaintiff's containers.

The Master: I know, but that was not covered in the direct examination here. I will sustain the objection.

Mr. Gariepy: All right.

Q. Mr. Krueger, are you acquainted with the proceedings that took place at the June, 1939, meeting of the United States Public Health Service Advisory Board, of which you say you are a member?

A. Yes.

Q. Did you attend said meeting?

A. I did.

Q. And was the matter of single-service containers at that meeting discussed?

1581 A. Yes, it was.

Q. Will you look at Plaintiff's Exhibit 61, consisting of three sheets, first, the letter and, second, the action of the United States Pubic Health Service with relation to the container, and tell me whether it represents the true result of that conference and the action of the Board of Advisors?

A. This is the copy of the regulations that were adopted, but does not include the change in the ordinance under Section 10 that was also made at the same time.

Q. Section 10 is the exhibit which was offered and received in evidence on the part of the defendants this morning, that you identified?

A. That is right.

Q. Now, besides the glass milk bottles are there any other containers that your division of the Board of Health inspects and examines for the matter of bacterial content and safety?

A. We examine all of the glass containers that are used by the dairies in accordance with the ordinance and regulations of the city of Chicago, because we enforce those regulations. That is our job.

Q. What containers do you examine, that are not 1582 glass containers that you permit the use of by restaurants and hotels?

A. I don't know of any container other than glass which is permitted.

Q. You stated that you performed the standard analysis or rinse test of 100 cubic centimeters of water being placed in the container and two centimeters being taken out and plated. That is the standard test?

A. The standard method, yes.

Q. And is that the only test that you apply to detect

the sanitary qualities of the bacterial count in the glass bottles?

A. Yes, that is the test we use. That is the test we use on routine examinations. We may make some others when looking for something exceptional, but that is our routine.

Q. You stated that you gave an instruction to inspectors to pick up paper samples or paper milk bottles in the city. What instruction did you give them, other than to pick them up?

A. I said that I gave the instructions to the inspectors, supervisors and directors to have certain bottles picked up, and my instruction to them was merely that certain paper containers were to be picked up and delivered to the laboratory for laboratory examination.

1583 Q. Do you know whether they ever picked any paper containers up from the plaintiff, Fielderest Dairies, at their plant?

A. I don't know that, no, sir.

Q. Did you ever cause any containers from that plant to be brought in to you?

A. Some of the containers that were brought in were those, so far as we know, put up by the Fielderest Dairies, yes.

Q. Were they with milk in them or without milk?

A. So far as I know, they all had milk in them.

Q. But you got no containers at Fielderest Dairies that were sealed and paraffined and closed, without milk being in them?

A. Not that I know of, no, sir.

Q. Now, let us get back to the United States Public Health Ordinance and Code previous to June, 1939. Will you point out to me any restriction, ruling, regulation or provision that excludes single-service containers?

A. Under Section 10 there is a requirement that milk and milk products sold in the distributor's containers in quantities less than one gallon shall be delivered in standard milk bottles.

Q. Is that your answer, Mr. Kreuger?

A. Just a minute. I want to look through this.

1584 It is a big book.

The Master: Is that ordinance in evidence?

Mr. Gariepy: Not yet. He asked him if he knew about this ordinance, what the provisions of it were previous to June, 1939, and what he knows about it now.

Mr. Schaefer: Section 10 of it was all.

The Master: Off the record.

(Discussion had off the record.)

Mr. Gariepy: Q. Do you know offhand, Mr. Krueger, without looking through the ordinance?

A. The section that I just referred to, Section 10 of the ordinance, requiring standard milk bottles, would not permit the use of paper milk bottles.

Q. That is your idea about it?

A. That is my opinion, yes.

Q. Will you look in the Mayor Kelly milk ordinance that I show you now and point out to me any provision in there excluding single-service containers?

Mr. Schaefer: That is objected to.

The Master: That is a matter of argument. You don't have to have this witness testify to that.

Mr. Gariepy: He says he considered the United States Standard Code—

The Master: Read the question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

1585 Mr. Schaefer: That is objected to.

The Master: I will sustain the objection. It calls for an argument.

Mr. Gariepy: Q. Did the United States Advisory Board in June, 1939, change the definition or add any definition to the United States Code concerning a standard milk bottle?

A. Yes, they did change that definition so as to include or make it possible to include paper milk containers.

Q. Then paper milk containers are considered standard milk bottles under their definition of the code at this time?

A. No. The decision of the Board was that the wording in the past did not include paper containers or the standard paper bottle did not include paper containers, and for that reason a change was made in the ordinance that milk sold in quantities less than one gallon shall be placed in standard milk bottles or single-service containers.

Q. But previous to June, 1939, the ordinance provided in Item 12-p that you read, and also in Item 15-p, on pages 95 and 99, respectively, with regard to the use of single-service containers for the sale of milk, didn't it?

1586 A. At the time of the Advisory Board meeting—

Q. No. I am just asking you about what this ordinance provided.

The Master: Repeat the question.

Mr. Gariepy: Q. Mr. Krueger, the United States Public Health Service Milk Ordinance and Code previous to June, 1939, on pages 95 and 99 thereof, that I showed you, did expressly state and refer to single-service containers for the use of and sale of fresh fluid milk, didn't it?

A. It did refer to that subject of paper containers, but it was so poorly worded in that code that for that reason the Public Health Service advised that it could be interpreted one way or another way, and that cities that had interpreted it not to include single-service containers were perfectly in their right to exclude them and could maintain that position within the meaning of the code.

Q. Then it was only a matter of clarification that they made this change?

A. No, I would say it was not a matter of clarification, because—

Q. Then it was to remove an ambiguity?

Mr. Schaefer: Just a minute. I suggest that the witness be allowed to answer.

1587 The Master: Let him answer.

Mr. Gariepy: Can't he answer the question without making a speech? I want a short and concise answer, yes or no.

The Master: Let him answer the question.

The Witness: A. (Continuing.) —because the Public Health Service Advisory Board had specifically said at the meeting previous to this June meeting that it did not recommend the use of single-service containers, and for that reason it did not even draw up requirements covering them.

Mr. Gariepy: Q. But they do recommend them now, do they?

A. At the—

Q. Answer the question yes or no, Mr. Krueger, please.

A. No, because—

Q. No, never mind your "because." Now, please answer the question. I don't want any arguments.

Mr. Schaefer: Oh, these bullying tactics.

The Master: If he can't answer the question that way, let him explain.

Mr. Gariepy: No, he can answer my question yes or no, in plain English. I don't want any "becauses."

The Master: If he wants to answer the other way, I will let him answer. Go ahead and put a question to him,

1588 or is there one pending?

Mr. Gariepy: No. I will put the question so he can answer it briefly.

Q. I will ask you the question again, Mr. Krueger, whether the United States Public Health Service and the Board of Advisors do now recognize the use of single-service containers for the sale of fresh fluid milk? Yes or no.

A. They do recognize that now, yes, sir.

Q. And you attended the meeting at which they took recognition of it?

A. Yes, and we took recognition by drawing up definite requirements that those containers shall meet before we shall give recognition to them.

Q. And before that time several cities were using them and several cities were not using them, is that right?

A. So I am informed, yes.

Q. You don't know how many were or were not, do you?

A. No, I do not.

Q. How much milk in quarts is sold in the city of Chicago at this time per year, if you know?

A. I do not know.

Q. How much per month?

A. I don't know how much is sold in quarts at any time.

1589 Q. You don't know how many glass bottles are used, do you, for the sale of milk per year?

A. No, I do not.

Q. Do you know how many bottles go through the Milk Bottle Exchange out here on the west side of the city?

A. No, I do not.

Q. Have you ever visited the Milk Bottle Exchange?

A. Yes, I have.

Q. How often?

A. Not very often. I think I was there several years ago, the last time.

Q. About what is the daily consumption of fresh fluid milk in the city of Chicago, if you know?

A. That runs approximately 1,300,000 quarts a day.

Q. And out of that 1,300,000 quarts a day your department took 1400 samples in one year?

A. That is right.

Mr. Schaefer: You mean of bottles, don't you?

Mr. Gariepy: Q. Of bottles?

A. Of empty milk bottles.

Q. Do all of the 140 dairies obtain their bottles through this Milk Bottle Exchange out here?

A. I don't know anything about the economic operations of the Milk Bottle Exchange.

Q. Do you know how the dealers get their bottles before they put them back in the machine and fill them and
1590 then you come to sample those bottles?

A. Yes. They get them back from their regular customers and some of them also from the Milk Bottle Exchange.

Q. But the number you do not know?

A. No, sir.

Q. At the University of Illinois, before you were graduated with a B. S. degree, did you take any courses in the husbandry department from Dr. Prucha?

A. No, I did not.

Q. You don't know him?

A. Oh, yes, I know him.

Q. You do know him?

A. Yes.

Q. Did he ever perform any work for the department of Health, research work?

A. Well, he did some work here a few years ago relative to the problems we were working on in connection with the high temperature short-time pasteurization, yes, sir.

Q. Mr. Krueger, is it not a fact that when you and Dr. White went down to Champaign to look at the Ex-Cell-O machine and the Pure-Pak container, you told Dr. Paul Tracy then not to publish reports concerning his research work on the Pure-Pak container until all of the containers were tested and all of the reports were ready to go out at the same time?

Mr. Schaefer: That is objected to.

1591 The Master: Oh, I will let him answer.

Mr. Schaefer: Oh, if the Master please—

The Master: I will let him answer.

Mr. Schaefer: I want to argue that. There is certainly no relation between any conversation—

The Master: Well, I have been holding him down. I will let him answer this question.

The Witness: Will you read the question?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. My recollection of my conversation with Dr. Tracy relative to that matter was that Dr. Tracy

told me that the University was going to get out a bulletin on the work done on paper milk containers and that they were testing the Ex-Cell-O machine and several other methods of manufacture, and that they were going to publish a bulletin and asked my ideas as to how that bulletin could be made most effective for use in the state, and, as I recall it, I did say that it would be helpful, not only to us, but to others, to get the results of all of the examinations they made on the various types of bottles that they tested.

Mr. Gariepy: Q. Did you say anything about the time for the release of that information?

A. I did not mention about the time of the release,
1592 but Dr. Tracy, as I recall it, did, and he told me that he understood that Dr. Breed of New York State was going to come out with a bulletin, and he wanted to beat him to it.

Q. Have your inspectors that report to you in the milk division inspected and approved of the sanitary conditions at the Fielderest Dairies plant at Chemung, from which wholesale milk is sold in the city?

A. No, sir.

Q. Do you know that wholesale milk is sold from said plant with the permission of the Board of Health of the city of Chicago?

A. In regard to the—

Q. Do you know that, Mr. Kreuger?

A. Just read the question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

Q. Change that to fresh fluid milk sold at wholesale from the plaintiff's plant at Chemung, in the city of Chicago, by and with the permission of the city of Chicago.

A. The Dean milk plant at Chemung has a plant which operates under a raw milk permit from the Board of Health of the city of Chicago, yes, sir.

Q. That is being done at this time?

1593 A. Yes, sir.

Q. And has been how long?

A. Oh, about three or four years.

Mr. Gariepy: That is all. Mr. Rall wants to ask a question.

The Witness: I would just like to correct my last answer. I said they had a permit. It is a milk receiving station for the sale of raw milk in Chicago.

Mr. Gariepy: Just another question, Mr. Krueger.

Mr. Schaefer: Is this a question from Dr. Tonney, that he suggested, Dr. Tonney?

Mr. Gariepy: Mr. Shcaefer, is it any of your concern whether Dr. Tonney gives me fifty questions or sixty questions?

Mr. Schaefer: Go ahead and put the question.

Mr. Gariepy: It is none of my concern whether Dr. Arnold gives you a hundred questions at any time, breakfast time or any other time. You are entitled to put all the questions you want, no matter who gives them to you.

The Master: Well, let us go ahead.

Mr. Gariepy: Q. Mr. Krueger, how often does the washing soda in the soaker washing machine have to be changed, if you know?

A. It has to be changed every two weeks, at least.

1594 Q. And do you know positively whether they change it or not?

A. Yes, our inspectors enforce that section of the ordinance and code, the same as they do the other requirements of the code.

Q. Have you ever had any occasion to find sludge in the bottom of those washing machines?

A. In the bottom of the machines there is a substance formed by the combination of sodium hydroxide with water, and I assume that is what you refer to as sludge, yes, sir.

Q. And that is from the accumulation of impurities from the water itself, taken from the bottles, and dropping to the bottom, is that right?

A. I don't know what it consists of, but it is a natural action from putting sodium hydroxide in the water, so that that sludge forms over a period of time.

Q. How often do you take samples of this water in the soaker washing machines that are used to supply 95 per cent of the milk in the city, to determine the caustic qualities of it?

A. Those samples are taken by the inspector whenever he is making an inspection of the plant and finds it convenient to do that, which is at routine intervals.

1595 Q. Do you have any records in your office concerning that inspection and that report?

A. Only with the records that the inspector makes, which he may have. I don't know whether there are any in the office or not.

Mr. Gariepy: That is all. Mr. Rall will ask him a question.

The Master: Just a moment. Whom do you represent on this question?

Mr. Gariepy: I will ask him, if the Master does not want him to ask him.

Mr. Rall: I think it is better that Mr. Gariepy should ask it.

Mr. Gariepy: I will ask him then.

Q. Do the records in the milk division of the Board of health contain monthly reports of the inspectors upon the glass bottles in these 140 dairies that are permitted to sell milk in the city?

A. Yes, they do.

Q. But as to the inspectors' reports on the quality of the washing fluid in the soaker washer, you don't know?

A. Now that you remind me of these reports, there is a section on the report sheet that concerns the proper operation of the bottle washing equipment, and the
1596 inspector in his routine inspection of these plants inspects that as part of his routine work in inspecting the plant and makes a report on that, yes, sir.

Mr. Gariepy: That is all.

Redirect Examination by Mr. Schaefer.

Q. Mr. Krueger, how does it happen that there were so many bottles examined coming from the Ogden Dairy Company, since September, 1939?

A. Those bottles were taken at my direction, following a conversation between myself and yourself, at a time when you said there was some question about the efficiency of the operation over there, and I told you that our records showed that this bottle washing equipment and methods were exceptionally good, that we had had no violations there for a considerable length of time, and that just previous to the time that the testimony was introduced relative to the operation of that plant we had taken some samples and at your suggestion we took approximately ten bottles a day every day during the week from then on.

Mr. Schaefer: That is all.

Mr. Gariepy: That is all.

(Witness excused.)

1597 Mr. Schaefer: Dr. Tonney, will you take the stand, please?

The Master: You were previously sworn in this case?

Dr. Tonney: Yes, sir.

DR. FRED O. TONNEY called as a witness by the defendant, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Schaefer.

Q. Why are you here today, Doctor?
A. Well, to advise Mr. Gariepy and to show my interest in this case.
Q. To what?
A. To show my interest in this case.
Mr. Schaefer: That is all.
(Witness excused.)
Mr. Schaefer: I have another witness who I could put on, but we cannot conclude with him before you will want to adjourn.
Mr. Gariepy: Let us have him on direct and then I will cross-examine him after lunch.
Mr. Schaefer: All right.
The Master: Put him on.

1598 MATTHEW J. MARTINEK called as a witness on behalf of the defendant, being first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. Will you state your name?
A. Matthew J. Martinek.
Q. And your occupation is what?
A. Principal chemist, in charge of the chemical laboratory of the Chicago Department of Health.
Q. How long have you held that position?
A. Nine years.
Q. And prior to that time, when you accepted that position, what was your occupation?
A. I was senior sanitary chemist of the Chicago Department of Health for eight years.
Q. Is the position of principal chemist in the Department of Health a Civil Service position?
A. It is.
Q. You said you were the senior sanitary chemist for approximately eight years?

A. Yes, sir.
Q. What school did you attend, Mr. Martinek?
A. The University of Chicago.
Q. When was that?
A. 1921. Graduated with Bachelor of Science Degree in chemistry.
1599 Q. Did you specialize in chemistry at that institution?
A. I did.
Q. Are you affiliated with any public health association?
A. The American Public Health Association.
Q. Have you written any articles that have been published with respect to the field of public health chemistry?
A. Yes, sir.
Q. Where were those published?
A. American Chemistry Society Journal and the Journal of the American Public Health Association.
Q. And to what did they pertain?
A. Gases, toxic gases; the determination of carbon monoxide in minute quantities in air and bloods, and detection and determination of methyl chloride in small quantities.
Q. Have you had any experience as a chemist in addition to that which you obtained as an employee of the Board of Health?
A. I am a major in the chemical warfare service of the United States Army. I have done some private consulting work and I am also a licensed dairy analyst for the State of Illinois.
Q. What are your duties as principal chemist in the Department of Health of the City of Chicago?
A. Well, I have immediate charge and supervision
1600 over twelve chemists who are engaged in routine and specialized chemical analyses pertaining to public health chemistry, and I also carry on independent research for the department, and I study new methods and introduce new methods of analyses as they come out, and I sign and approve all reports that leave the chemical laboratory of the Department of Health.
Q. What types of matter do you normally investigate as principal chemist in that department?
A. We have quite a variety of samples brought in. The food bureau brings in samples of preservatives, adulterants, certified colors, spoilage, decomposition. The dairy

division brings in routine samples for butterfats, gravity, added water. Creams are brought in for thickeners, and dairy products are tested for adulteration and preservatives.

We also run a test to determine whether or not a milk has been properly pasteurized or not.

Then we also have samples brought in which might be either accidental poisoning cases or with criminal intent. Such samples, of course, of the latter class, are brought in by the police department.

We also have a water section, in which we carry on routine and specialized water analyses of Lake Michigan water, and we carry on a complete line of blood chem-
1601 istry analyses, urine and spinal fluid, and then we also do work for the fire department and five prevention samples, and also arson cases.

I think that covers it pretty well.

Q. In the course of your duties as principal chemist for the Department of Health, have you had occasion to perform any tests with respect to paper containers used for the distribution of milk?

A. I did.

Q. What were those tests?

Mr. Gariepy: When? Let us get when.

Mr. Schaefer: We will get it all in due course.

Mr. Gariepy: I object until he tells where and when he performed it.

The Witness: The tests were performed—

Mr. Schaefer: Just a minute.

Mr. Gariepy: I am objecting until he tells when and where he performed it.

The Master: Tell us when.

The Witness: We started on February 6, 1939, and practically up to date.

Mr. Schaefer: Q. And what were those tests?

A. There were two types of tests conducted. One test was the methylene-blue absorption test to determine the visibility of the dye in the paper and the others were
1602 to determine suspended paraffin in the milk of the paper containers.

Q. How many paper milk containers did you examine during that period?

A. About eleven hundred.

Q. Now, will you describe the procedure which you followed in conducting the methylene-blue test to determine the absorption of the containers?

A. The sample of paper container was emptied of its milk content, thoroughly washed with water, and a one-eighth per cent methylene-blue solution prepared by dissolving four grams of methylene-blue in four liters, which was added to the top of the container. This solution was allowed to stand in contact with the container for one hour, after which time the dye solution was emptied:

Q. But taken out of the container?

A. Poured out. The container was again thoroughly washed with water, cut open and allowed to dry. Then of course it was examined for the amount of dye penetration. When the work was introduced I carried on the test up to a point where it became a routine matter or brought to a routine basis, and after that I allowed my chemists to prepare the paper ready for examination.

Q. What did the results of those experiments dis-
1603 close with respect to the absorbency of the containers?

A. Every container that I examined showed some dye penetration, more or less. Of course, these readings were not exactly what we call true dye penetration. It was more a question of the area of the paper that was dyed. No chemical or mechanical measurements were taken. It was all done by the eye, by observation.

Q. You mean, you made no effort to determine quantitatively the amount of the penetration?

A. Quantitatively, that is right.

The Master: Was it along the base of the container?

A. I will explain. For convenience, we looked at the container and we noticed that the lateral corners or the bottom corners or the bottom surface showed dye penetration. That is how we reported that. We either reported two bottom corners had a medium dye penetration or heavy dye penetration, and the four lateral corners had a slight dye penetration.

Q. By lateral, you mean up and down?

A. Up and down, that is correct.

Mr. Schaefer: Q. Did you find any instances where the bottom of the container, away from the corners, indicated penetration?

A. Some containers showed considerable areas of
1604 dye penetration. We also examined empty milk containers and these showed relatively less dye penetration than those that were filled with either cream, milk or chocolate milk.

The Master: Q. What do you mean by empty milk containers? Empty paper containers?

A. Yes, empty paper containers.

Q. Do you mean you took containers which were to be used for milk or for cream or for chocolate milk, or do you mean containers which had actually been used and had contained those substances?

A. I am trying to bring out the fact that we also had several empty containers brought in, empty. They were never filled at any time. Those showed relatively less dye penetration than those that were filled, like with milk or cream and so on.

Q. I don't quite get what you are driving at there. On the first test that you described here, in which you saw some signs of methylene-blue, those were conducted on paper containers?

A. That came filled.

Q. Which had been filled?

A. Yes.

Q. And you emptied the milk contents, is that right?

A. Yes.

Q. And then later on you took some others that had
1605 never been filled?

A. That is right.

Q. But which were to be used in ordinary course for cream or for milk or for chocolate milk, as the case might be?

A. Yes. We only examined empty milk containers. We did not get cream or buttermilk or chocolate milk.

Q. Did you detect any difference in the amount of penetration when you took a container which had actually been used for milk—

A. Yes.

Q. (Continuing) —than you did when you took a container which had never been used?

A. Yes, there was a difference.

Q. I see.

A. Those that were not used showed very little dye

penetration. Those that were used showed considerable dye penetration.

Mr. Schaefer: Q. Did all of the empty containers which you used show evidence of penetration?

A. Yes.

The Master: Q. By empty, you mean both those that had been used and those that had not?

A. No. Those that were never filled with a dairy product.

1606 Mr. Schaefer: Q. How many of those empty containers did you examine?

A. There must have been about ten or a dozen.

Q. Where did you get those?

A. Where?

Q. Yes.

A. They were brought in by a milk inspector.

The Master: Q. They were not all paraffined, were they?

A. In and out.

Mr. Schaefer: Q. Did you find from those experiments that the dye penetration varied in the containers, depending upon the nature of the milk product which had been contained in them?

A. To a certain extent. It showed, for example, that the buttermilk seemed to show a lot more dye penetration than milk.

The Master: Q. That is, the container had been actually used once before?

A. Yes, it had had buttermilk in it, for example. That showed a lot more than the ones that had milk in it. Of course, we have all types of cases, but it indicates that certain types of containers, such as those containing buttermilk, seemed to show a lot more dyed area.

1607 Mr. Schaefer: Q. You mean after emptying the milk or buttermilk?

A. Yes. The dye, yes.

Q. Do you have with you any of the containers?

A. Yes, we have.

Q. On which you performed those tests?

A. Yes, we have.

Q. Will you get those for me, please?

A. Yes.

Mr. Gariepy: I take it, Master, that these are Pure-Pak containers that he is referring to. If not, I move it all be stricken.

The Witness: We have a mixture. We have two types.

Mr. Schaefer: Q. Do you have with you a sample which would show dye penetration, which you would characterize as light?

A. Yes, I have. Not so very many lights. They are usually medium or heavy. We could not find very many lights, except in the empty. Here is one I would call a heavy.

Mr. Schaefer: I would like to have this one marked Defendants' Exhibit 19 for identification.

(The container referred to was thereupon marked by the reporter Defendants' Exhibit 19 for identification.)

1608 The Master: Off the record.

(Discussion had off the record.)

The Master: We will adjourn until two o'clock.

Whereupon a recess was taken at 2 o'clock p. m. of the same day, Wednesday, October 11, 1939.

1609 * * (Caption) * *

Wednesday, October 11, 1939.
2 o'clock p. m.

Met, pursuant to recess.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

1610 The Master: You may proceed.

MATTHEW J. MARTINEK, a witness called on behalf of the defendants, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination (Continued) by Mr. Schaefer.

Q. You testified this morning, Mr. Martinek, that you performed experiments to determine the presence of suspended paraffin in milk contained in paper containers. Will you describe the procedure which you employed in performing those experiments, please?

A. A quart of milk was filtered through a Wisconsin sediment tester. This instrument is used normally for determining the visible sediment of milk. It consists of a

cylinder, the bottom of which has a detachable screen, on which is placed a filter disk, a cotton filter disk. The top of the container has a hinged cover, made air-tight with a rubber washer, which has an opening, and has attached an aspirating bulb.

Q. How large is the disk?

A. It is a little over an inch.

Q. In diameter?

A. But one inch in diameter is the area that usu-
1611 ally collects the sediment. A quart of milk, therefore, was filtered through this apparatus, and the apparatus was then washed carefully with three washings of water at 110 degrees Fahrenheit, since butterfat melts around 100 to 105. This was to insure that all of the butterfat would be washed through the disk. We also made two washings with 95 per cent alcohol, 50 cc each, and one washing with absolute alcohol, 50 cc, to further insure a complete washing out of the butterfat.

Q. By washing you mean washing the Wisconsin sediment tester?

A. Washing the disk.

Q. The disk?

A. Washing the disk, so that the only thing that would remain would be the paraffin, if there was any.

Q. Yes.

A. The disk was then removed and placed into an evaporating dish, to which was added 75 cc of petroleum ether or ligroien. This was gently shaken in a water bath to cause the solution of the paraffin into the petroleum ether. The solution was then filtered through a dry filter paper, into a weighted platinum dish.

This operation was performed to remove any possible visible sediment and lint that might collect from the
1612 disk, following the solution of the paraffin into the petroleum ether.

The ether was again evaporated to dryness, and the platinum dish was then weighed to a constant weight.

Q. What do you mean by a constant weight?

A. We make two or three weighings and when the weight is within reason constant, we use it. There might be a little petroleum ether that might stay behind. We want to make sure the only thing we are weighing is the residue.

Q. In the case of the experiment you describe, what is that residue?

A. It would be paraffin.

Q. What did the result of that experiment indicate, with respect to the presence or absence of paraffin in the milk, in the paper container, which you emptied into the Wisconsin sediment tester?

A. This experiment indicated that we found paraffin ranging from one milligram all the way to 107 milligrams in a quart of milk.

Q. Is the procedure which you have described, in your opinion, as a chemist, a reliable method for determining the presence of suspended paraffin in milk?

A. Yes, sir. There is one step that I would like to bring in there yet. That is, we might be evaporating the
1613 same quantity, which would be 125 cc of petroleum ether, just separately, to get the value of what we call the non-volatile substance in it. That had to be subtracted from the paraffin, because there is always a small quantity of residue in petrolic ether that must be accounted for.

Q. And did you do that as a control?

A. Not as a control, but to be sure to get the true weight of the paraffin.

Q. Did that experiment indicate the presence of suspended paraffin in every paper container examined?

A. Yes.

Q. How many containers were so examined?

A. About 138.

Q. Now, in the course of your duties as chemist at the Board of Health, have you had occasion to perform any experiments designed to show at what temperature paraffin decomposes and the products of that decomposition?

A. I did.

Q. Will you describe that experiment or those experiments?

The Master: Q. Would you call that oxidation?

A. Oxidation?

Q. Yes.

A. In what case now?

1614 Q. The decomposition, do you call that oxidation?

A. Not necessarily. It might be a reduction. If you have a decomposition, a negative decomposition, like putrefaction, it is still decomposition, but there are no acid products formed. It would be ammonia that would be formed. It all depends on the type of decomposition. In this case it would be acidic products formed.

Mr. Schaefer: Q. Will you describe the procedure that you used in performing those experiments?

A. We obtained paraffin marked USP, standard U. S. Pharmacopoeia, having a melting point of about 125 degrees Fahrenheit. We took one gram of the sample of this paraffin and placed it into a test tube, and took another gram and placed it into another test tube. In the first tube we added water, 50 cc of water, heated above the melting point of the paraffin, around 150. There we are melting the paraffin with water heated to 150 and shaking it up thoroughly to dissolve any soluble acid products in the water. We determine the acidity of this water solution by two methods. One the Beckman hydrogen ion apparatus.

Q. Is that an apparatus commonly used for measuring acidity?

A. Yes, free acidity.

1615 Q. Yes.

A. And the other is the Lamatte colormetric apparatus.

Q. Is that apparatus also in common use for measuring acidity?

A. It is.

Q. Then what did you do?

A. In the second tube we placed into a water bath, which was heated by means of an immersion heater, electric heater, and which was kept constant with a thermoregulator.

Q. At what temperature was that apparatus kept constant?

A. The first test we ran at 165, then 175, then 185.

Q. Fahrenheit or centigrade?

A. Fahrenheit. All the way up to 205, I think. I have got the figures here. I haven't it exactly in mind.

Q. Go ahead.

A. This bath was heated for four hours, after which time the tube was removed, and water again heated to 150 was added, and the acidity again determined by the same method that we used on the first one. In other words, we prepared two tubes, one tube heated for four hours and the other not heated, and then determined the acidity of both.

Q. What was the result of the comparative acidity of

the one sample of paraffin which was heated to a point
1616 somewhat above the melting point and its acidity immediately determined, as compared with the acidity of the paraffin which had been heated to the temperatures you have mentioned for a period of four hours?

A. In the tube that was heated for four hours the paraffin showed an increase in the acidity.

Q. How was that increase in acidity measured?

A. By the two instruments, one the colormetric and the other by the hydrogen ion apparatus.

Q. To determine the acidity did you measure the acidity of the paraffin?

A. No, of the solution that the paraffin was shaken in.

Q. And that solution was what?

A. Water, double distilled water.

Q. What if anything does the fact that the acidity of the water was affected by the paraffin which was placed in it indicate with respect to the solubility of the acid products of the heating of paraffin in an aqueous medium?

A. There is an indication that acid products are formed when the paraffin is heated and, naturally, in order to determine the hydrogen ion concentration or the acidity, that had to be soluble in the water. There might be other insoluble acid products formed, but those were not
1617 determined.

Q. The products you measured and determined—

A. —were purely those that were soluble in the water.

Q. Do you have with you a table which you prepared showing the result of that experiment?

A. I have.

Mr. Schaefer: Mr. Reporter, will you mark this Defendants' Exhibit 19 for identification?

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 19 for identification.)

Mr. Schaefer: Q. Mr. Martinek, I show you Defendants' Exhibit 19 for identification. Will you examine it and explain the meaning of the entries in the lefthand column, which is headed "Lab. No. of Sample"?

A. That is the laboratory number that is placed on our chemical cards.

Q. And the next column, headed, "Electrometric Determination of pH" means what?

A. It represents the hydrogen ion concentration. It is really a 1 over the hydrogen iron, or the recriprocal, we call it.

Q. Is the pH the standard method of measuring degrees of acidity?

A. It is, one of the most accurate methods.

1618 Q. And by that method what is neutral?

A. Seven.

Q. And as acidity increases does the pH increase or decrease?

A. It decreases.

Q. So that a pH of 5.8, for example, indicates greater acidity than a pH of 7?

A. That is right.

Q. Now, will you explain the meaning of the entries in the third column of Defendants' Exhibit 19, designated as "Coloremetric Determination of pH"?

A. The colormetric method is merely based on the dye change in the presence of various acid concentrations, and certain dyes have what we call sensitivity at certain concentrations. Now, using brom thymol blue, which is used between a range of, say, 7.2 down to about five or six—

Q. pH?

A. pH.

The Master: Q. What does "pH" stand for?

A. The hydrogen ion or the acidity in the solution. All we do here is to add a half of cc of the dye to 5 cc of the sample and compare that to a set of standards prepared, that are kept under a vacuum and away from light, so they would not deteriorate.

Q. And the meaning of the entries in the next column headed "Temperature, Degrees F." is what?

A. Those are the temperature at which the paraffin
1619 was heated for four hours.

Q. And the next entry headed, "Electrometric determination of pH" indicates what?

A. That is the readings we got after the paraffin was heated for four hours in the Beckman apparatus.

Q. And the next column, entitled, "Colormetric Determination of pH" indicates what?

A. The results we got by using the Lamatte colormetric apparatus.

Q. And the next column, entitled, "Average of Electrometric and Colormetric pH Reading" indicates what?

A. That is our average.

Q. The reading of those two methods?

A. Of those two methods.

Q. And the last column, entitled, "Increase in Acidity of (pH) due to Heating" indicates what?

A. The amount of increase at these various temperatures. At 165 we got an increase of three-tenths. At 175 we got an increase of 1, at 185 an increase of 1.4 and 1.2, which would give us an average of 1.3.

Mr. Schaefer: Would it be more convenient for you, Dr. Tonney, if we got you a copy of that exhibit?

Dr. Tonney: I don't think so.

The Master: Do you object to Dr. Tonney here?

Mr. Schaefer: No. I just want to call attention to
1620 the fact that he is here, though.

Mr. Gariepy: We know it, Mr. Schaefer. You told us all morning. Since Dr. Tonney first appeared you have told us. But Dr. Arnold has been here all during the lawsuit.

The Master: Just a minute.

Mr. Gariepy: I don't like these aspersions about Dr. Tonney, when Dr. Arnold has been here right along.

The Master: Dr. Arnold is engaged here in an official capacity with the Board of Health.

Mr. Gariepy: Right.

The Master: And Dr. Tonney is connected with no one in this case, unless he is connected with you, as one of your assistants.

Mr. Gariepy: I answer you as I did before, that he is interested in public health and he has a right to be here.

The Master: He has a right to participate in the hearing.

Mr. Gariepy: I don't know of any participation. Mr. Schaefer put him on the stand as his own witness.

The Master: I am just asking the question. Mr. Schaefer is objecting, apparently, to Dr. Tonney participating in the case, if he is not connected with you in some way.

There may be a great number of people who might be
1621 interested in this case, but all they can do is sit around and listen. They cannot get up here and start examining exhibits and stand behind the witness here, as if they were actually participating in the case. Now, I see counsel here in another case. He is sitting away over there in the corner. He is not actually participating in the case.

Mr. Gariepy: You are referring to Mr. Collins?

The Master: Yes. Now, if you say Dr. Tonney is assisting you, he will be just one of your assistants.

Mr. Gariepy: Master, I want the record to show that I

am open to getting all of the information I can get, from Dr. Arnold, from Mr. Schaefer or from Dr. Tonney or from anybody else, on this subject, and I know the Court is highly interested in getting all the information he can.

The Master: Then Dr. Tonney will be instructed, since he is not officially a part of this case, other than as a witness, that he has a perfect right to sit here and listen, he is welcome to sit here and listen, but that he should not participate in the case more or less as counsel or somebody connected with either of the parties in the case. If he wants to talk to counsel, that is all well and good with me, but when witnesses are being examined or when exhibits

1622 are being examined here, it is not necessary for Dr. Tonney, or any one of the other spectators or part of the audience, to get up here and start looking at these exhibits, as if they are with one of the counsel in the case.

Proceed, Mr. Schaefer.

Mr. Schaefer: Q. Again referring to Defendants' Exhibit 19, when paraffin was heated to a slight degree above the melting point of the paraffin and then measured immediately, what acidity did you find?

A. It was really a slight alkalinity there.

Mr. Gariepy: Was what?

The Witness: A slight alkalinity.

Mr. Gariepy: Slight alkalinity?

The Witness: Yes.

Mr. Schaefer: Q. The pH measurements ranged from what points to what points?

A. You mean in this column here? (Indicating.)

Q. What was your lowest pH and your highest?

A. From 7.1 to 6.9.

Q. And after the paraffin had been heated for four hours, at temperatures ranging from 165 degrees Fahrenheit to 185 degrees Fahrenheit, what ranges of acidity in terms of pH, did you find?

A. From 5.7 to 6.8.

1623 Q. Is the test which you have described, the results of which are reported on Defendants' Exhibit 19, in your opinion a fair and proper method of determining the relative acidity of paraffin handled in the manner which you have described?

A. Yes.

Q. Referring back for a moment to the tests which you described with respect to the determination of the quantity

of suspended paraffin in paper milk containers, were those tests, in your opinion, fairly conducted to determine the presence and the quantity of suspended paraffin in milk?

A. Yes, sir.

Mr. Schaefer: That is all, Mr. Martinek.

The Master: I would like to ask one question there.

Q. To what do you attribute the fact that this methylene-blue adhered to the folds or corners of the interior of one of these paper containers, rather than to the walls?

A. For some reason or other those parts were not properly paraffined, and therefore a water soluble dye could enter the pores of the paper at those points.

Q. Would you say that the corners or folds might have been properly paraffined, but chipped off?

A. That might happen. We found cases where samples came into the laboratory frozen and we actually found
1624 chips of paraffin in the containers.

Q. Now, going to the tests that you conducted to determine the traces of paraffin that might be found in the milk, would you say that that paraffin represented chipped paraffin or not?

A. In some cases there were particles that could be very plainly visible to the naked eye, and in some cases we had to use a magnifying glass to notice them on the disk. In some cases we had a good sized piece that you could not mistake for anything else but a good sized piece of paraffin.

Q. Were all of the samples containers that you used in these experiments frozen?

A. No. They came in cold, but there were cases, once or twice, where they came in frozen, and in those cases I remember we found pretty good sized particles of paraffin.

Q. Would freezing at very low temperatures cause the paraffin to chip?

A. That is possible.

Q. Was the degree of coldness of those containers such as to cause them to chip?

A. They were frozen. The milk was actually frozen.

The Master: Go ahead.

1625 *Cross-Examination by Mr. Gariepy.*

Q. Are you a doctor? Are you Dr. Martinek or Mr. Martinek?

A. No, just a Mr. Martinek.

Q. You are not a milk sanitarian, are you?

A. No, I am not.
Q. Are you a bacteriologist?
A. No, sir.
Q. Who asked you to perform these tests that you performed and started on February 6, 1939?
A. My chief, Dr. John L. White.
Q. Did Dr. White perform any of these tests with you, or did you do them all alone?
A. As I mentioned before, I performed them to bring them to a routine basis, and then of course I had some of my chemists assisting the work, because that is what they are there for.
Q. Dr. White is a bacteriologist in the Board of Health, is he?
A. He is the chief of all of the laboratories. That includes the water laboratory, the—
Q. Doctor, you and I will save a lot of the Master's time and our own, and a lot of expense if you will just answer the questions. Is he chief in the bacteriological department of the Board of Health, yes or no?
A. Yes.
1626 Q. Where did you get the samples that you testified you performed these various tests on; do you know where they came from?
A. Most of the samples were brought directly from the bacteriologists, because they received them first.
Q. Do you know where they got them?
A. From the inspectors.
Q. Do you know where the inspectors got them?
A. No, I do not.
Q. You don't know?
A. No.
Q. Did you at any time in performing these tests ever ask the Fieldcrest Dairies, the plaintiff here, to send you any samples of paraffined containers without milk in them?
Mr. Schaefer: I object to that as immaterial.
The Master: He may answer. Did you or didn't you? Yes or no.
The Witness: A. Is the Fieldcrest this type here (indicating container)? Is this a Fieldcrest type?
Mr. Gariepy: Q. That is right.
A. I might have asked them, but I did not receive any.
Q. Who did you ask at Fieldcrest?
A. I asked Dr. White if he could obtain us a few.
Q. But did you ever ask any official or employee of

Fielderest Dairies to send you some samples, that you
1627 were going to perform tests?

A. No.

Q. At any time?

A. No.

Q. Do you know whether the Fielderest Dairies offered the Board of Health of the City of Chicago previous to February, 1939, to send them any sample containers without milk in them?

A. No, I do not know.

Q. You don't know anything about that?

A. No.

Q. Did you ever find any methylene-blue in milk?

A. No.

Q. Never?

A. No.

Q. Is it a part of milk usually, a component part of it?

A. No, it is not.

Q. It is not in there at all?

A. No.

Q. Where did you get these empty containers, if you know, Doctor; except that they came through some inspector, you say, and then through Dr. White, you don't know any more than that, do you?

A. No.

Q. Do you know anything about any adulteration of containers before you received them, or not, in regard to their condition?

A. No, I do not.

1628 Q. Did you perform any disintegration tests on these paper containers?

A. Yes.

Q. When?

A. During the period between. I would not know the exact date, but we did run some tests.

Q. Who asked you to do those?

A. Dr. White.

Q. Did you take the bacterial count on them, or did he do it?

A. I don't do any bacteriological work whatsoever.

Q. Who took the bacterial count on the disintegration tests that you performed?

A. What do you mean by disintegration tests?

Q. You said you performed some.

A. I mean, we dropped some of the containers to see how they stood up. That is all I mean.

Q. Is that what you call a disintegration test on a container?

A. Yes, sure, I would.

Q. Doctor, will you state in the record what you understand a disintegration test of a paper container to be?

A. I thought you meant whether the container would stand up under normal or rough usage. That is what I thought you had in your mind by disintegration.

1629 Q. You do not know of any other test, other than what you call standing up, do you?

A. No, that is right.

Q. Did you ever go to the mills to check this paper board?

Mr. Schaefer: I object to that.

The Master: Yes, sustained.

Mr. Gariepy: He is a chemist, and if he is a chemist he ought to know about the constituent and component parts of the paper board.

The Master: He merely testified to certain tests that he made.

Mr. Gariepy: Q. What is paraffin used for, Doctor, other than on such containers as you see here before you today, if you know, in the way of food products?

Mr. Schaefer: That is objected to as going beyond—

The Master: Read the question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

The Master: I will let him answer, if he knows.

The Witness: A. It might be used for other types of containers.

The Master: Do you know? Let us not have what might be. Do you know of any other uses of paraffin in food products containers?

1630 A. Yes.

Q. What are they?

A. Butter containers are paraffined. Oyster containers might be paraffined. Sauerkraut sometimes is delivered in paraffined containers, and sometimes they use what they call oil containers.

Mr. Gariepy: Q. Are cheese containers, that you put cottage cheese in, that the dairy delivers, are those paraffined?

A. They might be, yes.

Q. Are the drinking cups you use at a soda fountain paraffined?

A. Yes.

Q. Are the straws that you sip things through, such as liquids, at a soda fountain, paraffined?

A. Yes.

Q. Did you run any paraffin tests on any of these other containers that are used at a soda fountain, drinking cups and straws and cheese containers, and things that they sell in stores?

A. No, sir.

Q. You did it just on the paper containers here?

A. That is correct.

Q. How many of these tests did you run on the Dean container, or we will call it the Fieldcrest?

1631 A. I forgot to go over the records, but there were quite a few.

Q. Did you run them on other containers than this?

A. Yes.

Q. What others?

A. The American Can Company containers.

Q. How many did you run on those?

A. I have to say we ran the two types and we ran some 1130 samples.

Q. How long a period of time were you running those samples?

A. Every day we received a certain number, and we started February 6th.

Q. And you ran them up to when?

A. We even ran some last Monday.

Q. And you have been doing that every day since February 6th?

A. There might have been some days where they skipped. I don't know.

Q. And where did you get the containers, all of these containers, up to last Monday; where did they come from, if you know?

A. If the bacteriologists got them first, we received them from the bacteriologists. If they did not request the bacteriological analysis or determination, they were brought directly to us by the inspector.

Q. Is it not a fact that paraffin is used by house-
1632 wives to seal the tops of canned fruit jars, when they can fruits, Mr. Martinek?

A. It is used by them, yes.

Q. Is that injurious, to do that?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Is this paraffin that you say you performed this experiment with and that you are acquainted with, this USP 11, which has a melting point of 125 degrees Fahrenheit, injurious to health?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: I cannot understand that ruling, Master. I am awfully stupid and dumb, but this man is trying to say that paraffin is bad.

The Master: He didn't say it was bad. He just said it was found in the milk.

Mr. Gariepy: He said it gives out certain acids and things at temperatures from 165 to 185, that it is bad.

The Master: But he is not a doctor. He don't know whether that is injurious to health. He is a chemist.

Mr. Gariepy: Q. Do you know that as a chemist?

A. I do not know.

Q. You do not know?

1633 A. I have not studied that phase of the work.

Q. Did you ever have any experience with milk bottles with paraffin on being heated by reason of exposure to the sun at 165 to 185 degrees?

A. No, I have not.

Q. But you performed this test on here with regard to finding the acidity of paraffin at 165 to 185 degrees, referring to Exhibit No. 19, didn't you?

A. Yes, sir.

Q. And those are the only temperatures you employed in testing that?

A. There was a range from 165 to 205.

Q. All right, but you performed them at those temperatures?

A. Yes.

Q. Would you expect to find any acidity or be able to detect any acidity forming at lower than 165 degrees of paraffin being exposed?

A. I doubt it.

Q. You doubt it?

A. Yes.

Q. Did you perform any tests concerning paraffin on paper milk bottle caps?

A. No, sir.

Q. Are they paraffined?

A. They might be.

Q. And the paraffin might chip off those caps and go into the milk, the cream line at the top, as they
1634 usually call it, is that right?

A. That might.

Q. Would that be injurious, in your opinion, as a chemist, to health?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. If this paraffin that you say you found in these containers and the containers themselves were frozen, would there be any reason why in your opinion the paraffin would not freeze on a paper cap at the same temperature?

A. It might.

Q. The same thing?

A. Yes.

Q. How long was this milk that you say you had in these containers on which you performed this test of washing it out and putting in the methylene-blue—how long was it left in the containers before you did that?

A. I would not know the exact time. They were all dated, but they were all brought in practically the same day by the inspector. They would go out in the morning and bring them in and at noon time.

Q. I mean, how long did you keep them before you tested them?

1635 A. We tested them immediately.

Q. The same day.

A. The same day they came in, yes.

Q. In these same containers that you referred to there—look at the one on the table, with methylene-blue in the corners—did you find any milk or any leakage in here?

A. No.

The Master: I might ask a question right there on methylene-blue.

Q. You took these containers while they were still damp from the milk or the water that you used to rinse out the containers, didn't you?

A. Yes.

Q. Would you say methylene-blue liquid or solution that you used there was as thick a solution as milk?

A. No.

Q. Would you say there is any difference in the penetrating powers of a liquid such as the methylene-blue solution and milk?

A. There might be a difference in penetrating power, but that was not so much measuring the penetrating power from the surface area that showed in the paraffin. In other words, you could not get this dye on here if
1636 there was paraffin present there, because parafin is impervious to water. It is like pouring water on a duck's back.

Q. What I am trying to get at is that perhaps less paraffin there might not resist methylene-blue solution, but it might resist milk.

A. This would indicate no paraffin here.

Q. No paraffin at all?

A. No.

Q. In other words, you would say that the methylene-blue solution would make that stain there only if there were no paraffin?

A. Or very little.

Q. That is what I am getting at. If there is very little paraffin there, little enough to permit a penetration of methylene-blue, might that same amount or small amount of paraffin still resist the penetration of milk?

A. I would say no, because by little I mean there were spots here that might have little patches of paraffin, but the majority of it had no paraffin, otherwise that dye could not penetrate that paper.

Mr. Gariepy: Q. Do you know of any more severe dye to perform this test with, in regard to detecting the extent and sufficiency of the paraffin, than this meth-
1637 ylene-blue?

A. Other dyes were used, but this was used for convenience.

Q. Do you know of any more severe dye?

A. No, I do not. There are all types. You can use methylene-red or methylene-orange or methylene-violet.

Q. Are there any more severe dyes than those to perform those tests with, is my question to you?

A. I would say no.

The Master: What do you mean by severe?

Mr. Gariepy: One that has the most penetrating qualities.

Mr. Schaefer: Do you know, Mr. Martinek?

The Witness: Yes.

Mr. Gariepy: Q. You know what I mean, don't you, Mr. Martinek?

A. Yes.

Q. Without Mr. Schaefer helping you?

A. Yes.

Q. Did you have dealings with anybody at the time you were requested to perform these tests, other than Bacteriologist White, to whom you referred, in the Board of Health?

A. Yes.

Q. Who?

A. Mr. Krueger.

1638 Q. Anybody else other than Mr. Krueger?

A. The inspectors that brought the samples in.

Q. I mean anybody in authority. Mr. Krueger is head of the milk division, isn't he?

A. Yes.

Q. Did you have any conversation with Dr. Arnold, a member of the Board of Health, concerning these tests?

A. Yes.

Q. You did?

A. Yes.

Q. When were those conversations that you had with him concerning the performing of these tests?

A. When we completed some of these tests, Dr. Arnold took a look at the results of our experiments.

Q. Did you collaborate with him before performing these tests and get any suggestions from him as to the procedure to be developed?

A. No.

Q. None at all?

A. No.

Q. Did you get them from Dr. White only?

A. Dr. White.

Q. How is this paraffin that you heated affected, if at all, when it cools again, after you have heated it to 165 to 185 degrees?

A. It will solidify.

1639 Q. And is there anything wrong with that, from a chemical standpoint, if it solidifies?

A. That is a normal physical process. If you heat it, you melt it, and if you cool it again it will solidify or congeal.

Q. Have you run any other tests concerning paraffin on paper containers of any kind, other than those you have just testified to on the Dean container and the American Can container?

A. No, sir.

Q. Do you know anything about the action of methylene-blue upon these drinking cups that are used at the soda fountains?

A. No, sir.

Q. Or upon paper containers that are used at soda fountains for use in selling liquids?

A. No, sir.

Q. You don't know anything about those?

A. No, sir.

Q. Did you test the milk, Doctor, to see if the acidity of the paraffin was reflected in the milk?

A. No, sir.

Q. By taste or otherwise?

A. No, sir.

Q. In performing this test of paraffin and heating it from 165 and 185 and even above that, I think you said you heated them, are these acids you found known 1640 as weak organic acids, or not?

A. There are some oxy-hydro carbons. The nature of them I do not know.

Q. You don't know whether that is harmful to health or not?

Mr. Schaefer: That is objected to.

The Master: He doesn't know.

The Witness: A. I don't know.

Mr. Gariepy: Q. Is there any way by which you can illustrate to the Master how much one milligram of paraffin is in size, so we can get some idea of what you are talking about?

A. Oh, it would be a small quantity.

Q. You say one milligram, that you had to use the glass on, if I remember right.

A. (Witness peels off and lays before the Master a small piece of paraffin.)

The Master: Is that a milligram?

The Witness: It would be purely a guess, but it is a small quantity.

The Master: Let the record show the witness took a knife and peeled off a bit of paraffin from the container before him, being about a quarter of an inch in length and—

The Witness: Very thin.

1641 The Master: (Continuing)—and probably about a half an inch in width.

Mr. Gariepy: Q. Do you know of any other tests that were performed by the Board of Health or any employee of the Board of Health referring to the absorption of paper containers?

Mr. Schaefer: I object.

The Master: Let him answer.

The Witness: I do not.

Mr. Gariepy: Q. Were those empty containers that you referred to in your testimony on direct American Can containers or Fielderest Pure-Pak containers?

A. American Can.

Q. American Can containers?

A. Yes, sir.

The Master: Will you read that question and answer? (Record read as above recorded.)

The Witness: Those that came in empty.

The Master: Those that came in empty?

The Witness: Yes.

The Master: I notice you have produced some containers here.

The Witness: Those were filled.

Mr. Gariepy: Q. Referring to the Fielderest Dairy containers, those were filled, is that right?

A. Yes.

1642 Q. In these tests that you related on direct?

A. I beg your pardon?

Q. That is, in the tests that you related on direct examination?

A. Yes.

Q. Are you still performing tests today on Pure-Pak containers that are brought into your department filled with milk?

A. I don't know if any came in today, but there were some in yesterday.

Q. And did you perform tests on them with regard to the paraffin and the suspension of paraffin?

A. No.

Q. What tests are you performing on them now, Doctor?

A. Just the methylene-blue.

Q. And that is all?

A. Yes.

Q. And for what purpose?

A. I beg your pardon, we did run some paraffins on cream.

Q. On cream?

A. On cream bottles.

Q. And for what purpose are you performing these methylene-blue tests on these Pure-Pak containers now?

A. I don't know. They are just submitted and I have to accept them.

Q. Who submitted them to you?

A. The inspectors.

Q. Who gave you orders to go through with these tests?

1643 A. Those were given to me by Dr. White. Just keep them up as long as they are brought in. When they quit, I will quit.

Q. And the same on the American Can containers, the empty ones that come in the same way, you just keep them up?

A. Not empty. They are filled.

Q. The American Can are filled or empty?

A. Filled.

Q. The American Can are filled, too?

A. Sure.

Q. Do you know what temperature of paraffin is applied to these containers when they are filled with milk?

A. I visited the University of Illinois plant—

Q. When?

A. I don't know. A year or two years ago. I don't recall which.

Q. All right.

A. I was up there with Mr. Krueger and Dr. White.

Q. Who did you see there with regard to the Ex-Cell-O machine and the containers, when you were there?

A. Dr. Tracy.

Q. And did you see the machine in operation then?

A. I did.

Q. Did you notice the paraffin that was being

1644 used, with regard to the temperature that was being applied?

A. If I am not mistaken, I think it was around 170, but I could not swear to it now.

Q. You don't know?

A. I am not positive now, because I do not recall.

Q. And after you went there two years ago, did you do anything as a chemist upon these containers, to ascertain their quality, with regard to sanitary fitness for use or in the use and sale of fresh fluid milk, other than what you testified to on fresh fluid milk in February, 1939?

A. Yes.

Q. When?

A. Before we visited the plant we received some containers?

Q. From whom?

A. From the inspectors. The usual inspector that brings them in.

Q. What is his name, this inspector?

A. Different inspectors at different times.

Q. Name some of them. I would like to make their acquaintance, Mr. Martinek.

A. I don't recall now.

Q. Can't you recall any of them for me? Be a little helpful. I have got to be dependent on you.

A. Mr. Clauson, I think, brought in some samples.

1645 Q. Mr. Clauson.

A. He brought in some yesterday or the day before.

Q. What is his first name?

A. I don't remember his first name.

Q. Give me another one of these inspectors that brought in these containers.

A. Mr. Larson.

Mr. Schaefer: Do you want some more help? Did Metzger bring any in?

The Witness: I don't recall right now. Paul, do you remember their names?

Mr. Schaefer: No, no. Never mind that.

Mr. Gariepy: Q. Did Mr. William Green bring any in?

A. Who?

Q. William Green.

A. No.

Q. That is all you remember?

A. As a matter of fact, Larson was bringing them in for a very long time.

Q. I think you were going to tell me what you did after you went down there two years ago.

A. Yes. We were trying to determine the stability of the containers under various usages and handling and under various temperatures, so we received the containers, and one set of them I placed into an ice box, to
1646 simulate winter conditions; another one, at 98.6 degrees in an incubator, to simulate summer conditions. Another set we placed at room temperature. Now, it happened that those that were kept at room temperature practically broke down, after exposure for about five hours or so at room temperature.

The Master: Q. What did they have in them?

A. Milk. That is the time we brought out the fact that the paraffin should have a higher melting point, and then also the paper should be a little heavier. Those were some of the first containers that were made. They did not hold up very good, so they had to do a little improving on them. Those also did not have that particular type of flap.

Q. The pouring lip, you mean?

A. The pouring lip. There is a possibility of this material getting into the milk and somebody accidentally swallowing it.

Q. You mean the fastener at the top?

A. The fastener at the top, the clip here.

Mr. Gariepy: Q. You say there is a possibility of that metal fastener, stapled through, getting into the milk now?

A. Not now. At the time I saw the first set of
1647 containers. Also we brought out the fact that when you open this container there is always the possibility of contamination by handling. That is the reason they put this on later.

Q. Did they tell you that was the reason or did you make complaint to Fielderest Dairy about it?

A. I made no complaint. I just made a verbal report.

Q. Did you make any report on these containers to the Fielderest Dairies, voicing these objections of the Board of Health?

A. I never make any reports outside. All my reports go to Dr. White. What he does with them, I don't know.

Q. Did you make that report to him?

A. Yes, sir.

Q. And those things were before the present pouring

lip was put on, that you refer to, this criticism that you made?

A. That is right.

Q. Have you any criticism of this pouring lip?

Mr. Schaefer: That is objected to.

The Master: Q. Have you made any tests on this?

A. No. You see, I am not a bacteriologist. I made no bacteriological tests. I made purely a physical examination, as requested.

1648 Mr. Gariepy: That is all, Mr. Martinek.

Mr. Schaefer: That is all, sir.

If the Master please, I now offer in evidence Defendants' Exhibit 19.

The Master: What is that?

Mr. Schaefer: The results of the tests Mr. Martinek made.

Mr. Gariepy: My objection is that he says he performed tests on this container and ours, that they were filled with milk, and it is not clear from his testimony, nor is there any foundation laid showing this paraffin test he has told about in his testimony on Exhibit 19 was taken from our container.

The Master: Let me ask Mr. Martinek a question.

Q. Was there any difference in the results that you obtained from your tests upon the two types of containers?

A. They varied considerably, the two types. One day we had quite a bit of staining, and sometimes not quite so much, in both cases, but we did not receive any Fieldcrest empty containers to test.

Q. This Exhibit 19, this is merely as to paraffin?

A. This is purely a sample of paraffin that had a melting point of 125.

Q. That has nothing to do with the staining?

A. No.

1649 The Master: Let us confine ourselves to the paraffin test.

Mr. Schaefer: That paraffin test had nothing to do with either type of container.

Mr. Gariepy: Then it has no basis in this lawsuit, if it does not apply to the containers here involved, on which he made the tests.

Mr. Schaefer: The witness has said it complies with U. S. Pharmacoepia 11, which is the type of paraffin used

here, and now that paraffin did not come from one of these containers. Obviously he is not going to scrape paraffin off of these containers to run the tests with.

The Master: Off the record.

(Discussion had off the record.)

Redirect Examination by Mr. Schaefer.

Q. Mr. Martinek, you have testified here to three tests which you have conducted. You have testified to tests as to dye penetration by methylene-blue, is that correct?

A. Yes, sir.

Q. You have testified to tests which you have performed to determine the presence and the quantity
1650 of suspended paraffin in milk contained in paper containers?

A. Yes, sir.

Q. And you have testified with respect to tests reported in Defendants' Exhibit 19, indicating the effect of the continued application of heat upon the acidity of the paraffin, is that correct?

A. That is correct. Any paraffin that is to be used around containers that are supposed to be used for eating purposes and so on must meet the USP standards, or should meet them.

The Master: Q. Then this Exhibit 19 does not refer to any particular container, does it?

A. It does not.

The Master: I will overrule the objection and the Exhibit may be received in evidence.

(Said table containing paraffin tests, so offered and received in evidence, was marked DEFENDANTS' EXHIBIT 19, and is attached hereto and made a part hereof.)

Mr. Schaefer: That is all, Mr. Martinek.

Recross Examination by Mr. Gariepy.

Q. Mr. Martinek, how much paraffin did you use
1651 in performing this test shown on Exhibit 19?

A. Five grams.

Q. That is a very small quantity, is it not?

A. Yes.

Q. And that reacts better to heat and more effectively to heat than a larger amount?

A. No, because the container simulates a large quantity. In other words, a larger quantity might have to be heated more thoroughly. You might get more decomposition with the water bath.

Q. That is what I am saying. You have less heat using this five grams than in a larger amount?

A. Yes.

Q. You will have to use more heat on the container?

A. No, sir.

Q. To get more effect?

A. Not on the container. In the bath.

Q. In the bath?

A. Yes. It might even get worse than what I have got.

Q. You have got to heat it higher?

A. Yes.

Mr. Gariepy: That is all.

1652 *Further Redirect Examination by Mr. Schaefer.*

Q. Now, see if I understand that, Mr. Martinek. Would the effect of acid reaction of paraffin to heat be in any way influenced by the quantity of paraffin subjected to the heat?

A. Yes.

Q. And what would that effect be?

A. Well, I bring it out this way: If you have a large amount of material to heat, a water bath might not be sufficient to keep it at that temperature, so you have o use higher steam for heat, so the decomposition around that might be greater than in my test, where I ran them on the small amounts, using five grams, so under actual operating conditions in the plants the decomposition might be greater than what I obtained here by my method.

Mr. Schaefer: That is all.

Further Recross Examination by Mr. Gariepy.

Q. Do you ever make any paraffin tests in a plant concerning this matter of acidity?

A. No, I have not.

Mr. Gariepy: That is all.

1653 Mr. Schaefer: That is all.

(Witness excused.)

Mr. Schaefer: We have a witness here who has not been sworn, Master.

ERNEST REUTER, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. Will you state your name, please, sir?
A. Ernest Reuter.
Q. Where do you live, Mr. Reuter?
Mr. Gariepy: May I interrupt? (Addressing a spectator:) Who are you from?
Mr. McIntosh: My name is McIntosh and I just happened to be Mr. Reuter's counsel. I am taking no part in the hearing at all.
Mr. Schaefer: Q. Where do you live, Mr. Reuter?
A. I live on Route 20, near Bartlett. That is the Elgin post office there. R. F. D. Route 20, Box 170.
Q. Illinois?
A. Illinois, Cook County, Illinois.
Q. What is your occupation, Mr. Reuter?
A. Manager of the Milk Dealers Bottle Exchange.
1654 Q. In Chicago?
A. In Chicago.
Q. How long have you been manager?
A. Ever since its inception in 1918.
Q. And you have been manager continuously since 1918?
A. I am the only manager they ever had.
Q. Are you familiar with the operation of the Milk Dealers Bottle Exchange, with respect to the handling of bottles received by the Exchange?
A. I am.
Q. Will you describe the procedure employed at the Milk Dealers Bottle Exchange, with respect to the handling of milk bottles received by the Exchange?
A. Well, our trucks pick them up from sources or places where they have gone astray and bring them into the Bottle Exchange. They are put on a conveyor and they go down to the basement and through the washing machine. That is all of the bottles that come from the dealers themselves. There is a small percentage, 3.99, to be exact, of the bottles that come from the junk dealers. Those bottles are first given a soaking and are washed by hand, and after they are washed by hand they are

then put through the washing machines, the automatic washers.

1655 Q. Now, with respect to those bottles, the 3.99 per cent that comes from junk dealers, in what are they soaked?

A. They are from dumps, that come in, not from junk dealers, but from different dumps, and collectors there.

Q. In what are they soaked?

A. In an 8 per cent alkali solution, caustic soda.

Q. For how long are they soaked?

A. As a rule, 24 hours.

Q. Then what is done with them?

A. They are washed and brushed by hand. They use a rotary brush. They put the bottles over a rotary brush, by hand, a rotating brush, and they are brushed inside and outside, and all the visible dirt taken out, until they are perfectly clean to the eye.

Q. Then what is done with those bottles?

A. They are then put through the automatic washing machines.

Q. Will you describe that automatic washing machine, please?

A. Yes. It is a five-compartment machine and there are pockets; it is fitted with pockets, sixteen around. We have three of those, by the way.

Q. You have three machines?

1656 A. Yes, we have three washing machines. Those pockets then are connected up to a chain, which travels up and down, in this sort of a motion (demonstrating), through different sections.

The Master: Q. By this sort of a motion, you mean up and down?

A. Up and down, just as I use my hand.

Q. I know, but the record has to show it.

A. Up and down, in the water in the first pocket, and then a second up and down in the second pocket, and a third, and each time they go into a different caustic solution.

Mr. Schaefer: That motion is like a roller coaster?

The Witness: Yes, only it is very slow. It gives it time to soak in there and it is very slow, and when it comes up, goes up, it empties whatever solution is in the bottle, and the bottle goes down in the next compartment and is again filled and soaked while going through there.

The Master: Q. What is that solution?

A. It is a caustic soda solution.

Mr. Schaefer: Q. Then what is done with them?

A. After it has gone through these five different compartments, which are heated up to a certain heat—
1657 they have a certain strength of solution in each one of them; it varies—then they go through a brushing operation. They go through rotary brushes, that brush the outside and the bottom, and then they go on a little further, to rotating machines that spin. They are vertical and spin in a vertical position. They enter up into the bottle. Then they are rinsed with a spray, and then they go through another set of brushes. They get two brushings and two sprays, and after that they get a thorough rinse. It is all automatic. The machine does that. The machine has a capacity of about 180 a minute.

Q. What temperatures are those solutions kept at, if you know?

A. Yes. I made a note of it here.

The Master: Q. By the way, the solution that is used with the hand brushes and the solution that is used in this roller-coaster affair, are the same, are they?

A. No. The hand brushing is a little more strong solution, but they don't get their hands into it. They take it out of that vat. It is in a perforated sort of a basket, and it is lifted out of the strong solution and put into water
1658 and then the man handles them by hand. By that time practically all of the dirt has been loosened up, so it brushes off very rapidly.

Q. That is a stronger solution than the solution in the bucket device?

A. Yes, because the bottles are a little dirtier then. It is a sort of metal tank, instead of a wooden tank. The stronger solution is in a metal tank, and the bottles empty out and the solution stays behind.

Q. You were going to give us the temperature of the water?

A. What was it you wanted? The temperature or the solution?

Mr. Schaefer: Q. The solutions?

A. The solution in compartment No. 1 is 2.4, in compartment No. 2 it is 2, in compartment No. 3—

The Master: Q. What is that you are giving now?

A. The caustic.

Q. You are giving us the solution now?

A. Yes.
Q. You say compartment No. 1 is how much?
A. 2.4.
Q. What is that, per cent?
A. 2.4 per cent of the solution.
Q. What is the second compartment?
A. Two per cent. The third is 1.9. The fourth is
1659 1.8 and the fifth is 1.5.
Q. That is in this second device that you were talking about, the five compartments?
A. The five compartments, yes.
Q. Go on.
A. The temperature in compartment No. 1 is 120 degrees Fahrenheit, in No. 2, 160 degrees Fahrenheit, in No. 3, 150 degrees Fahrenheit, in No. 4, 140 degrees Fahrenheit, in No. 5, 120 degrees Fahrenheit. These strengths of solutions and the temperatures of the water have proven to us to produce a clean bottle.
Mr. Gariepy: I object and move that be stricken. There is no question asked on that at all.
The Master: Yes, it may be stricken.
Mr. Schaefer: What was the ruling?
The Master: It may be stricken. Put another question.
Mr. Schaefer: Q. From your experience, Mr. Reuter, are you able to state whether or not the washing of bottles in the solutions and at the temperatures and by the method which you have described will result in a clean bottle?
A. Absolutely.
Q. You have an opinion, and that opinion is what?
A. That the bottle is absolutely clean.
1660 Q. Now, is every bottle received by the Bottle Exchange washed in the five-compartment washers which you have described?
A. All of them, unless they come in with tar or concrete or cement or that sort of stuff. We don't attempt to wash those. We simply break them.
Q. Are the bottles inspected at the time of their arrival at the Bottle Exchange?
A. All bottles are inspected at the time of their arrival at the Bottle Exchange and bottles that appear to have a little more dirt on them than others are set aside.
Q. And what is done with those bottles?
A. If we think they can be washed, we wash them, and if they cannot be washed, we break them.

Q. Do you dispose of the broken bottles?

A. Not those kind. Yes, we have to throw that stuff in the dump. We can't even sell it for cullet. Clean glass we can sell for cullet.

Q. And you do sell any broken clean glass for cullet, do you?

A. Yes.

Q. What is cullet?

A. Broken glass.

The Master: Q. What is it good for?

A. They use it in the glass factories in making new glass. It acts a flux. It is much cheaper for them to
1661 make glass when they have a flux to start the glass to melting, just like in soldering you have to have a flux before you can solder.

Mr. Schaefer: Q. All bottles received at the Bottle Exchange from dumps are subjected to two washing and disinfecting treatments, is that correct?

A. They are.

Q. For how long has the Bottle Exchange pursued the practice which you have described, with respect to the washing of bottles?

A. We put our washing machines in—we ordered them in May, some time during May, 1935, and we got them into operation some time in December, of 1935.

Q. And at whose instance did the Exchange begin to wash bottles?

A. At my suggestion, my recommendation to the Bottle Exchange and the Health Department, also, if we ought to wash bottles.

Q. As a matter of fact, you invented the type of washer used at the Exchange, didn't you?

A. No.

Q. You did not?

A. No, I did not.

Mr. Schaefer: Cross-examine.

1662 *Cross-Examination by Mr. Gariepy.*

Q. Mr. Renter, what is this Milk Bottle Exchange? Is it a corporation or is it owned by some individuals or what is it?

A. It is a corporation.

Q. And who are the officers, if you know?

A. The president is Mr. R. W. Nessler. The treasurer is F. H. Kullman. The secretary is F. A. Webb. The vice-president is J. H. Skrezypinski.

Q. Are any of the four men that you mentioned as officers connected with the milk industry, other than as officers of the Milk Bottle Exchange?

Mr. Schaefer: That is objected to. That is beyond the scope of the direct examination. The direct was restricted to the procedure followed in the plant.

The Master: I will let him answer.

The Witness: A. Yes.

Mr. Gariepy: Q. And what part of the milk industry are these four men associated with or connected with, if you know?

A. Just milk distribution.

Q. I mean, with regard to dairies.

A. Well, they have dairies.

1663 Q. They are all dairymen?

A. Yes.

Q. And who are the stockholders of this corporation, if you know?

Mr. Schaefer: That is objected to.

The Master: Overruled.

The Witness: A. The stock is held entirely by the milk industry, except I own one share.

Mr. Gariepy: Q. And by milk industry, who do you refer to, Mr. Reuter? Do you refer to dairymen?

A. Yes.

Q. Men that operate dairies?

A. And their employees.

Q. And their employees?

A. Yes.

Q. Is there any of that stock, if you know, for sale now?

A. None for sale. It is all sold.

Q. And has that been the condition since they started in 1918?

A. Oh, no. That has not been the condition. That is only recently. When we had no more to sell, we stopped selling.

Q. Do you also pick up milk bottles for people who are not members of the Milk Bottle Exchange?

A. We pick up milk bottles—it is impossible to pick 1664 up bottles without getting some that are not members.

Q. And what does a membership entitle one to, a

member of the Milk Dealers Bottle Exchange, as compared with one who is not a member of the Exchange?

Mr. Schaefer: I object to that.

The Master: He may answer.

Mr. Schaefer: That is far beyond the direct.

The Master: He may answer.

The Witness: A. They all get exactly the same service.

Mr. Gariepy: Q. Is there any difference in the rate charged?

A. No, excepting we have a non-member patron who we give contracts to. The contracts are all the same, as far as service is concerned.

Q. Do you charge so much for returning the member his bottle?

A. Yes.

Q. How much do you charge the non-member for returning his bottle?

A. The same as the member.

Q. There is no difference in the rate?

A. No difference in the rate.

The Master: What is the good of being a member, then?

Mr. Gariepy: Q. What are the advantages of membership, Mr. Reuter? Tell the Master.

1665 A. The advantages of membership?

Q. Yes.

A. Well, there are certain—well, I wouldn't know exactly if there is any special advantage. We have a discount to stockholders.

Q. That is what I am referring to. What is that discount that stockholders get?

A. It all depends. They get a certain discount on the net bill that they owe the Milk Dealers Bottle Exchange each month.

Q. For picking up and returning their bottles?

A. We pay three-quarters of a cent for all the bottles we take in.

Q. Yes.

A. We charge a cent and a half for all bottles we send out, regardless of who they go to.

Q. What are the advantages of a member as compared with one who is not a member of the Milk Dealers Bottle Exchange, who gets bottles?

The Master: He says he gets a discount.

The Witness: What has that got to do with this?

Mr. Gariepy: I want to know the difference.

The Master: What is the materiality of that in this case? All we are doing is running up a record here.

1666 Mr. Gariepy: I don't know why Mr. Schaefer put him on, then, as far as that is concerned.

The Master: Well, to explain some of your testimony, too.

Mr. Gariepy: Q. You said in answer to Mr. Schaefer's question that the bottles were absolutely clean bottles when they got through this washing.

A. Yes.

Q. Did you ever perform any tests on those bottles to ascertain the bacterial condition of them, Mr. Reuter?

A. No, but our laboratory men did.

Q. You did not, did you?

A. No.

Mr. Schaefer: Did you say the laboratory men did?

Mr. Gariepy: Mr. Schaefer, I have got him now.

Mr. Schaefer: Yes, but I want to hear what the witness said.

The Master: He said, but our laboratory men did.

Mr. Schaefer: I didn't hear him.

Mr. Gariepy: Q. Do you know anything about how your bottles are handled after they leave the Milk Bottle Exchange? Do you supervise that handling after they leave there?

A. No. We just deliver them to the owner. I
1667 know how they handle them. They are all washed again and sterilized.

Q. Do you ever supervise the washing and see how they are washed after they leave the Milk Bottle Exchange?

A. No, but I have seen it done often. I used to be a supervisor and milk dairy inspector at one time and I know all about it.

Q. When did you act as such?

A. From 1909 to 1916.

Q. And then you went with the Milk Bottle Exchange?

A. Most of that time I was supervisor.

Q. Most of that time you were supervisor?

A. I had supervision of it

Q. Have you done any of this work since 1916?

A. No, not for the city.

Q. Or for the Milk Bottle Exchange, in regard to going to the dairies?

A. Yes. My business as manager of the Bottle Exchange has carried me into the dairies quite frequently.

Q. Do you go into the dairies now?

A. Absolutely.

Q. Every day?

A. Not every day.

Q. Do you follow the bottles as they leave the Milk Bottle Exchange to William Croak's dairy in La-
1668 Grange, who is a member of the Milk Bottle Exchange?

A. The Bottle Exchange does. I don't.

Q. I am asking you.

A. No.

Q. Do you know anything about how Croak washes his bottles out there, how and when? Do you know that?

A. Sure we know.

Q. How do you know, if you were not there?

A. Because our men see it. Listen, you know. Why ask such foolish questions?

Q. You are a witness on the stand here, sir.

The Master: Q. Do you go to every single one, or just some of them.

A. Our men go to every single one, from the smallest to the largest.

Q. Do you personally go?

A. I have been. I don't make a practice of it regularly, because I am only the manager.

The Master: That is what he is asking you.

Mr. Gariepy: That is what I am asking you, yes.

The Master: Q. But you go to some of them?

A. Yes.

Q. Right along?

A. When something particular happens, I go.

1669 Mr. Gariepy: Q. What do you mean, when something particular happens?

A. When something is called to my attention, some infringement of our contract.

Q. With regard to washing or cleaning or what?

A. No.

The Master: Whatever is his busi ess.

The Witness: Whatever is my business, yes.

Mr. Gariepy: Q. Will you look at Exhibit 66 and tell me whether that is the same Milk Bottle Exchange that Mr. Schaefer asked you about (handing photograph to the witness)?

A. Yes, that is the picture of the Milk Bottle Exchange.
Q. And Exhibit 67, is that one of your trucks?
A. That is one of our trucks, yes.
Q. And the same thing on Exhibit 68?
A. Yes, that is one of our trucks.
Q. And Exhibit No. 70, that is a truck of yours, in the Milk Bottle Exchange?
A. Yes.
Q. And the same thing on Exhibit 71, picking it up at that place of business?
A. Yes.
Q. Or whatever you call it there.
A. What?
Q. What do you call that?
1670 A. I don't know where that was taken. It looks like it was taken at a junk yard, or something, or a dump.
Q. Do you have any figures as to exactly how many bottles these trucks bring in each day from the dump yards?
A. We can tell you that to a dot.
Q. How many?
A. Listen. It is a book that big. (Illustrating.)
Q. I am asking you now, Mr. Reuter, do you know?
Mr. Schaefer: You have not asked him.
Mr. Gariepy: Please, Mr. Schaefer, let him answer.
The Master: Let him answer.
Mr. Gariepy: Q. Do you know. Don't look at anything. Do you know offhand, without reading any notes, how many bottles your people pick up at the dump heaps, as you put it, each day?
A. That varies.
Q. It varies from what figure to what figure?
A. It varies at the present time from 35,000 to 60,000.
The Master: Q. What? Per day or what?
A. That is per month. I don't know. I won't answer unless I can look at these.
The Master: All right, now, put another question.
1671 Mr. Gariepy: Q. Where did you get those figures that you have got there?
A. Off of our books.
Q. You can't recall now, is that right?
A. No.
Q. You may look at that and tell me how many bottles a day you bring up off the dump heaps.

A. Here is what I have got here. The volume of bottles handled per month, for the month of September, by the Bottle Exchange, was 2,111,969, and 84,312, or 3.99 per cent were from the dumps.

Q. Who made that up and took it from the books, Mr. Reuter, if you know?

A. One of our clerks.

Q. Did you tell him to?

A. Absolutely. I knew I was coming here. I thought you wanted to know something.

Q. With regard to the treatment that you give to milk bottles that you say you picked up from dumps, is there any different treatment applied to those bottles that you get at junk yards?

A. Yes, we are just a little bit more critical with them, because they are not as clean.

Q. Are you able to ascertain whether a bottle comes from a junk yard or from a dump yard?

A. We have a record of everything that comes in.
1672 We have a sheet telling the number of bottles on there, where they come from, who picked them, who signed for them, and who checked them in. Every bottle is checked. We could not do business without doing that. We can tell you every transaction from the day we started in business in 1918 until today, the exact number of bottles in each transaction, if you can get the books from the Government.

Q. And this gentleman who is sitting to your right there—did you say from the Government? You were giving such a speech, Mr. Reuter, I couldn't follow you.

A. What?

Q. You were giving such a long speech I couldn't follow you.

The Master: Put another question.

Mr. Gariepy: Q. Who is this gentleman to your left?

A. Mr. McIntosh.

Q. He is your attorney?

A. Yes.

Q. What other than the driver's remarks to you when he brings in a truck, telling you whether that comes from a junk yard or a dump, do you have?

A. The driver doesn't make any remarks.

Q. Who makes the remarks as to where they come from?

A. It is all written down in black and white on paper.

1673 Q. By whom?

A. By the driver, the man who picks them up.

Q. That is what I am saying. You get that from the driver?

A. Yes.

Q. You trust the driver to give you an accurate report?

A. We check up, to see that he is right.

Q. But as to the source where he got the bottles?

A. If he did not give credit to the people he picked them up from, they would very quickly tell us about it.

Q. Do you give any credit to the junk yard when you pick them up at a junk yard?

A. Certainly.

Q. How much credit do you give them?

A. We allow them seven cents a dozen.

Q. And how much do you pay the dump when you pick them up from the dump?

A. We pay them a little more.

Q. And is that the city? If you went to a city dump and got some, you would pay the city a little more than that?

A. We don't pay the city. We pay the dump keeper.

Q. You pay the dump keeper?

A. Yes.

Q. How much do you pay him?

A. Nine cents.

Q. Nine cents for how many?

A. Per dozen.

1674 Q. Per dozen?

A. It is all dozen prices. The prices vary in different places, according to how important they are to us.

Mr. Gariepy: That is all, Mr. Reuter.

Redirect Examination by Mr. Schaefer.

Q. Does any bottle ever leave the Bottle Exchange without having been first inspected for cleanliness, Mr. Reuter?

A. No.

Mr. Schaefer: That is all.

Recross Examination by Mr. Gariepy.

Q. Mr. Reuter, what does that inspection consist of?

A. The bottles before they go through the washer, they are all handled, and if they are too dirty, they are thrown aside for the soaker. After they come out of the other end of the washer, after being washed, every bottle is examined by the attendant at that end of the machine.

Q. That is, visibly?

A. Sure. We cannot make a chemical test. And
1675 if he overlooks anything, when they get up to the sorter, if there is anything there that is not clean, it is set aside, and if something gets by the sorter, it goes up to the packer, and if he finds anything out of the way, he sets it aside. So we have a pretty good check. It is pretty hard for an unclean bottle to get out, and if an unclean bottle should get out, it is washed and inspected in the dairy, and sterilized. The bottle is examined before it is filled, and after it is filled. They are mighty careful about dirt, because dirt in a bottle means death to the dairy.

Mr. Gariepy: That is all.

Further Redirect Examination by Mr. Schaefer.

Q. Mr. Reuter, were you subpoenaed to appear here today?

A. Yes, sir, I was.

Q. Did you ever see me, to your knowledge, before today?

A. Never did.

Q. Or Mr. Horan, who is this gentleman here?

A. I never seen any of them in the room, except Mr. McIntosh.

Mr. Schaefer: That is all.

The Master: That is all.

(Witness excused.)

1676 DELMAR M. RUDIG, called as a witness on behalf of the defendants, being first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. What is your name?
A. Delmar M. Rudig.
Q. Where do you live, Mr. Rudig?
A. 10117 South Rhodes Avenue.
Q. In what city?
A. City of Chicago.
Q. By whom are you employed?
A. The Board of Health of the City of Chicago.
Q. In what capacity are you employed by the Board of Health?
A. Senior bacteriologist.
Q. Is that a Civil Service position?
A. Yes, sir.
Q. Are you a Civil Service employee?
A. That is right.
Q. How long have you been employed by the Board of Health of the City of Chicago?
A. Approximately seven years.
Q. Have you been a senior bacteriologist all of that time?
A. Approximately six years of that time.
Q. Where did you receive your college education, Mr. Rudig?
1677 A. I attended Drake University, at Des Moines, Iowa.
Q. When did you attend Drake University?
A. 1924 to 1926.
Q. Did you attend any other educational institution?
A. The University of Iowa.
Q. And when was that?
A. That was along about 1928, 1929, 1930, two years there, from 1928 to 1930.
Q. And during the period you have just described, what were you studying?
A. I was taking a pre-medic course during the time I was at the University of Drake, and one year pre-medic at the University of Iowa.

Q. Then did you receive any instruction at any medical school?

A. Two years.

Q. Where?

A. University of Iowa.

Q. When was that?

A. That was in 1930 and 1932.

Q. What are your duties as senior bacteriologist for the Board of Health?

A. We have quite a variety of duties there, as a senior. We deal mainly with contagious disease, that is, more specifically with the diagnosing of diptheria, scarlet fever, typhoid, dysentery specimens. At times I have been at the sereological department, which has to do with the
1678 running of Kahns and Wassermans for the diagnosis of syphillis, and occasionally we have special problematical work that might come up and be assigned to us.

Q. Have your had occasion as a bacteriologist for the Board of Health of the City of Chicago to perform any experiments designed to show the relative efficiency of paraffin as a bactericidal agent when applied in melted form to dry paper, as contrasted with its efficiency when applied in melted form to moist paper?

A. Yes, I have experimented with that.

Q. Will you describe those experiments, please? When were they first conducted?

A. Sometime during the period from March to April or May.

Q. Of what year?

A. I believe that was this year, 1939.

Q. Will you describe those experiments, please?

A. Yes. The problem as presented to me was more or less a verbal summary of bringing out the effect of wet paper and dry paper efficiency, as to how it worked in killing organisms.

The Master: I didn't get that.

1679 The Witness: This particular problem was as to the difference between wet paper and dry paper and its effect when put in the paraffin bath, how it would effect the killing of organisms.

So we devised a setup something like this: We took some paper carton plaques about the ordinary consistency of milk cartons. These were cut into one-inch squares. We cut a good many of those. They were sterilized in an auto-

clave, which is an instrument for sterlizing at high pressure, 15 pounds pressure, so these plaques were put through this autoclave and sterilized in Petri dishes, and then after that we set up a set of Petri dishes—they are round dishes, about ten centimeters round, with a lid, and a bottom on there of glass.

In those we put some blotters, cut them so they would fit into these Petri dishes, a set of those, and those were sterilized, and after they were sterilized we poured sterile distilled water into these blotters to make them moist, not so that the water was running all over the place, but just to saturate them, so the blotters were moist.

In another set of Petri dishes we put in some plaques and put those in the drying oven. We put them in
1680 drying oven over night, I believe it was, about 24 hours, and exposed the white plaques in these Petri dishes at one time for five hours and at another time for 24 hours. In other words, the main object was to have a set of sterile plaques that were wet, or damp, at least, in moisture, as distinguished from another set of plaques and another set of Petri dishes that were dry.

Then we took a series of these two and ran them through a paraffin bath.

First, we made a culture of organisms. Twenty-four hours in a broth culture. Then this acted as our incubator material. Large organisms grown in the broth. As I recall, we used a four millimeter loop to place the organisms on to these little square plaques.

Mr. Schaefer: Q. What was the purpose of placing the organisms on the plaques in that manner?

A. I used a four millimeter loop, so we could put a uniform number of organisms on each plaque. We wanted to have each set of plaques inoculated with the same number of organisms, approximately.

Q. What did you then do?

A. When these plaques were inoculated, we put
1681 them in a paraffin bath. The paraffin bath was at the temperature and maintained at the temperature of approximately 176 degrees Fahrenheit for 20 seconds. Then we removed those quickly from the paraffin bath and placed them in a sterile Petri dish, which contained a glass bead.

Q. What is a glass bead?

A. Just a round piece of glass.

Q. What was the purpose of using the Petri dish with a glass bead on it?

A. We laid the one-inch plaque up against the bead, so the drying effect would not stick to the bottom of the Petri dish or break the paraffin.

Q. Then what did you do?

A. After those had been cooled, we placed some of these that had been treated this way into this broth. We put the whole plaque right in there. With the other series of tubes we used sterile forceps to pick up these plaques, and we crinkled those, that is, bent the plaques to break the paraffin, and those were put into another series of tubes for incubation.

Q. Then what did you do?

A. Those were carried out with a great number of plaques, to get a general picture, to show the compara-
1682 tive effect. Then these were incubated for 72 hours. We looked at them at 24 hours, and 48 hours and at 72 hours, for different readings, to see whether or not the broth was cloudy and contained growth, and in those that contained growth we confirmed this by taking a loopful of these organisms and placing them on another sterile media, and put them on the surface of an agar plate, to see whether or not they were the same organisms with which we started.

The Master: Did you find any trespassers?

The Witness: Very seldom.

Mr. Schaefer: Q. What was the result of that experiment, with respect to the relative efficiency of the paraffin as a bactericidal agent, when applied to the moist plaques, as compared with its efficiency when applied to the dry plaques?

A. It showed quite a difference in them, in that the plaques that were moistened before use showed a greater killing of organisms than those that were used dry.

Mr. Schaefer: Mr. Reporter, will you mark this Defendants' Exhibit 20 for identification and this one Defendants' Exhibit 21 for identification.

(The documents referred to were marked by the
1683 reporter Defendants' Exhibits 20 and 21, respectively, for identification.)

Mr. Schaefer: Q. Will you look at Defendants' Exhibit 20 for identification and tell me what that is, Mr. Rudig?

A. This is a report of the results of the work that

showed the comparative effect of the wet and dry plaques and run through a paraffin bath.

The Master: What is that?

The Witness: I say this is a report showing the results of the comparative effect when using the wet and dry plaques, after being run through a paraffin bath, and under condition of being inoculated for organisms.

Mr. Schaefer: Q. And that exhibits shows the type of organisms used in the various tests which you run, is that correct?

A. That is right.

Q. What is the meaning of the entries following the word "Plaque" in the first line of Defendants' Exhibit 20?

A. The word "Plaque" there means that it was one of those pieces of carton of which we cut off a one-inch square.

1684 Q. What did you do with it?

A. Those and several like it we inoculated with the organisms as indicated on the chart and run through the paraffin bath and at the temperatures mentioned, and for the length of time mentioned, and inoculated in broth as mentioned.

Q. As a matter of fact, the entries appearing after the word "Plaque" all indicate no growth of bacteria?

A. Yes. That was run as a control there. That is, these first three were run as controls, to show that our plaques were sterile, to begin with.

Q. And the second entry of "Organisms," the entries following that mean what?

A. Those organisms show that—there we took the organisms directly and put them on the plaque, without subjecting it to the paraffin bath or any other treatment, to show that the organisms would grow in the medium which we used.

Q. And what was done with respect to the third entry, the paraffin?

A. The paraffin there, we took the plaques, as they were, sterile, untreated in any other manner, and just put these plaques in the paraffin bath alone, with no organisms on them, and planted those in the broth. That would indicate that the paraffin was free of organisms.

1685 Q. The first tests on Exhibit 20 were control tests?

A. Yes.

Q. On that exhibit how do you indicate plaques in showing a growth of test organisms?

A. By the plus sign.

Q. And how do you indicate no growth of organisms?

A. By a negative sign.

Q. How do you indicate a plaque which shows a growth of organisms, but which are not the test organisms?

A. Indicate that by a plus sign in parentheses.

Q. Now, I show you Defendants' Exhibit 21 for identification. Can you tell me what that is?

A. This is another experiment that was conducted, following the first one. The same technique was used throughout, with the exception of using a broth culture organism to inoculate; we used a growth which grew on an agar slant.

Q. And on Defendants' Exhibit 21 you indicate plaques showing growth by the same symbols which you used on Defendants' Exhibit 20, is that correct?

A. That is correct.

Mr. Schaefer: Cross-examine.

1686 *Cross-Examination by Mr. Gariepy.*

Q. Mr. Rudig, what quality of paraffin did you use to make the test, as to the bactericidal effect of paraffin on damp paper and dry paper?

A. We used a paraffin that had a melting point of 125 to 127 degrees Fahrenheit.

Q. Did you perform any test on this plaque, this piece of paper, first with regard to its sterility or sanitary qualities?

A. Yes. On each test there the record shows we run a whole series of plaques showing its sterility.

Q. What are these plaques that you refer to? What relation have they to paper milk bottles?

A. They were cut from cartons.

Q. What cartons?

A. From milk cartons.

Q. Name the cartons and describe them.

A. I believe the cartons we used were Dean's. That is, the name on the carton was Dean. I don't know who made that. The other was the Bowman. I think in this particular experiment we used the Dean plaques.

Q. Where did you get them?

A. They were submitted to the laboratory.

Q. By whom?
A. I don't know.
Q. You don't know?
1687 A. In other words, in the laboratory, working there, this material is all brought in to us, and we use it there as it is presented to us.
Q. Had they been paraffined before or not?
A. In some cases they were paraffined and in some cases they were not. In this particular experiment I believe we used the unparaffined plaques, and those that were paraffined, the paraffin was extracted by the ether method, petroleum ether, and then sterilized.
Q. And how did you sterilize them after you took the paraffin off of them?
A. They were sterilized in a 15-pound pressure autoclave.
Q. Did you disintegrate the material?
A. Apparently not.
Q. No. Answer the question. Did you disintegrate the material?
A. What do you mean by disintegrate?
Q. Don't you know what disintegration is as a bacteriologist?
A. It is a term for breaking down.
Q. Did you break it down?
A. Not to my knowledge, no.
Q. Do you know what that disintegration test is?
1688 A. I do not know of any specific disintegration test.
Q. Did you ever, as a bacteriologist for the Board of Health, for the last six and a half years that you have been a senior bacteriologist, perform any disintegration on paper board?
A. I have not.
Q. Have you performed any disintegration tests on any paper containers used in the city for liquids or food?
A. No.
The Master: Q. Did you sterilize the unparaffined plaques as well as the paraffined plaques?
A. Yes. Well, what I mean by the paraffined plaques, those we used were preparaffined before we received them, but that was extracted.
Q. What I wanted to get at was the sterilization. You did that to both?

A. Yes. Everything was sterilized before we started any experiments, and then we ran control tests all the way through.

Mr. Gariepy: Q. As I take it from your direct examination, you say that your tests on dry paper or these plaques of dry paper, paraffined, had a decided bactericidal
1689 effect, is that right?

A. Yes.

Q. When milk cartons are paraffined, they are dry, are they not?

A. Well, I suppose they are—

Q. Are they dry or wet, do you know?

A. I don't know the moisture content of those, no.

Q. Then your test on wet containers would not mean anything with regard to the practical operation of the Pure-Pak container or the dry container when it is filled with milk; would it?

A. This would probably show indirect evidence, as far as wet plaques and dry plaques are concerned, yes.

Q. But if the paper containers are dry when they are inserted in the machine and paraffined, how are you going to compare that? By just guessing?

A. There is always a change in the atmospheric moisture that might affect it.

Q. Is that the only thing that might affect it in a milk plant?

A. There is a good deal of moisture usually around.

Q. Did you ever visit the Chemung plant of Fieldcrest Dairies?

A. No.

1690 The Master: He has testified to the bactericidal effect on dry plaques.

The Witness: In other words, this test is just to show the relationship of the dry and wet plaques.

Mr. Gariepy: Q. Does dry air kill non-spore forming bacteria?

A. No, dry air is not a very good killer of spore formers.

Q. Not spore forming, I said. I didn't say spore forming.

A. Oh, I thought you had.

Mr. Gariepy: Read my question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

The Witness: A. Yes.

Mr. Gariepy: Q. Yes or no?
A. Yes.
Q. And how much exposure to dry air would kill them?
A. I wouldn't know exactly.
Q. Did you perform any tests to ascertain that?
A. No.
Q. At whose suggestion did you perform these tests in March, April and May, 1939, which you say you did?
A. The chief of the laboratory, Dr. White.
Q. Did you perform any tests at all with regard to
1691 the paper board and the paper containers of Dean or Bowman, as you call it, at any time previous to March, April and May, 1939?
A. No.
Q. Then you have no idea with regard to how long a period of time the non-spore forming bacteria will live on dry paper, do you, 24 hours, 48 hours or 72 hours?
A. Only what I have read, that some organisms that might grow on dry paper might die off rapidly and other types may not die off so rapidly. It depends on the type of organism and the conditions to which they are exposed.
Q. Have you made any experiments to determine the bactericidal effect of the drying of paper on the bacteria, particularly the spore forming bacteria?
A. No, I have not.
Q. Have any been made in the bacteriology department of the Board of Health at any time subsequent to February 6, 1939?
A. There may have been some made. Not to my knowledge.
Q. You don't know about it?
A. That is right.
The Master: Q. As I recall it now, your testimony is that the paraffin had a greater bactericidal effect on
1692 the dry plaque than on a wet one.
A. Just the opposite. It had a greater killing power when the plaques were wet.
Mr. Gariepy: Q. What effect did it have on the dry? As I understand it here, the moistened plaques shows great killing and the wet plaques showed killing.
Mr. Schaefer: They are the same thing.
Mr. Gariepy: No, they are not.
The Master: Yes, it is the same thing.
Mr. Gariepy: I mean the dry plaques.

The Witness: A. I think the results on the table there show a definite relationship. If I remember right, I think there were about twenty out of fifty that showed growth on the wet plaques and about 46 out of the same number, 50, that showed a growth with the dry plaques.

Q. A little better than double, you would say?

A. Approximately.

Q. Do you know with regard to the actual conditions of the plaques concerning the number of organisms on there?

A. No. If I get your question, I suppose you mean the number of organisms on cartons used anywhere?

Q. Yes.

A. No, I don't know.

Q. This test that you employed here required a
1693 heavy dosage of organisms on them, didn't it?

A. Yes, fairly heavy dosage there.

Q. Did you ever hear of paper milk containers having the same quality of organisms as you applied in your dose in your test?

A. They would be subject to the organisms, because they would be the usual kind you would find around people.

Q. Did you ever find organisms of the same quality on these containers found in the market?

A. No. I never went into that.

Q. You don't know anything about normal conditions?

A. No.

Q. Do you know what these plaques are made out of, with regard to the quality of the paper?

A. I don't know the constituents of the plaques.

Q. You don't know?

A. They are the regular milk containers, whatever they might be, but it is out of my line to go into the study of plaques.

Q. You had nothing to do with ascertaining the quality of the paper board that these plaques came from?

A. No.

Q. Whether they were made out of second-grade stock or made out of virgin spruce pulp?

1694 A. No.

Q. You don't know anything about that?

A. No.

Q. Can you pick out from Exhibits 20 and 21 the plaques and the tables on which the Dean containers, as

you called it, were used, and separate those from the ones you called the Bowman containers that were used?

A. It does not show on this particular report, but on the first page of this report it describes the technique. I believe they are referred to on that.

Mr. Gariepy: Mr. Schaefer, have you the first page that he is referring to?

Mr. Schaefer: Is that what you mean, Mr. Rudig (handing document to the witness)?

The Witness: Dean's plaques.

Mr. Gariepy: Q. How many of those on Exhibits 20 and 21? You have just said here, under Dean's plaques that you referred to, that they were sterilized in an autoclave for one hour at 15 pounds pressure on two successive days. How many of those?

A. All of them.

Q. And you have got on this table plus or minus signs. What does that mean with regard to the number of bacteria?

1695 A. It doesn't have anything to do with the number.

Q. You didn't count them?

A. This test was put in broth, you see. You could not tell the number.

Q. You could not tell the number?

A. In other words, this means one organism present or two or three or fifty, it would show the same result.

Q. And if there were one, two or fifty, or a million, the plus would show that?

A. Yes.

Q. And if there was none, it would be zero?

A. Yes.

Q. But no accurate count was made?

A. Not in this test. Let us see about this. On 17, no, but on 16 there were some counts made to show the number of organisms, approximately; this particular one.

Q. Exhibits 20 and 21, which are the ones I asked you about concerning the effect of plus and minus?

A. Yes.

Mr. Gariepy: That is all, Mr. Rudig.

The Master: Is that all, Mr. Schaefer?

Mr. Schaefer: Yes. I offer in evidence Defendants' Exhibits 20 and 21.

Mr. Gariepy: Master, I object. There is nothing show-

ing that Exhibits 20 and 21 apply to the Pure-Pak
1696 container of the plaintiff here, except as this witness said he could not point them out and there is nothing in here showing the amount of bacteria. It is just plus and minus. It might be one or a million. It is immaterial. I don't see anything to it.

The Master: Well, I will let them go in. Objection overruled.

(Said documents, showing experiments Nos. 16 and 17, as conducted by the witness, so offered and received in evidence were marked DEFENDANTS' EXHIBITS 20 and 21, respectively, and are attached hereto and made a part hereof.)

The Master: Q. By the way, did you encounter any difference, Mr. Witness, between the two types of plaques, Dean's and Bowman's, in the results that you obtained?

A. No. For experimental purposes all of these paper plaques gave about similar results. Those that were extracted with ether or not extracted with ether, as far as paraffin is concerned, it made no difference.

Q. It made no difference whether you had the Dean paper or the Bowman paper?

1697 A. No.

Mr. Gariepy: Q. Mr. Rudig, since the Master asked you that question, how do you account for any growth of this bacteria on these plaques?

A. The only answer is that they were not killed when they were exposed in the paraffin bath twenty seconds at 170 degrees Fahrenheit.

Q. But if I told you that these plaques were made out of paper board that was sterile and free from bacteria, how would you account for it?

A. If they were sterile, they would not grow or come through.

Q. You inoculated them, didn't you?

A. Some of them, but we ran some controlled ones that were not inoculated.

Q. Do you mean to tell me you took these plaques and performed these tests without doing any inoculation on them at all, and just made the count after immersion in water?

A. We made the count to prove they were sterile after the test.

Q. In the beginning?

A. After they were autoclaved.

Q. What do you mean by that?

A. Subjected to 15 pounds pressure, in closed ves-
1698 sels, under steam heat.

Q. Do you know whether these parcels of board had any greater pressure on them than this 15 pounds of heat that you refer to?

A. No, that is the only time.

Q. If I told you they were under rollers at 250 degrees Fahrenheit, with pressure on them, steam rollers, would you still say there were bacteria on this paper board?

Mr. Schaefer: I object to that. He is not a bacteriologist on paper.

Mr. Gariepy: He is too.

The Master: I think I will sustain the objection. That is argumentative. He has merely given you the results of the tests that he conducted. You can argue about that later on.

Mr. Gariepy: Q. You don't know anything about the making of these plaques or these parts of paper board that you made this from, do you?

A. No. I am not a paper man and I did not go into that.

Q. Did you have any occasion to check into the making of this board?

A. No, I did not.

Q. Or any other type of paper container?

1699 A. No. There was no necessity for it, with this type of experiment, at least.

Q. Why?

A. My problem is one to express whether or not this paper, the same in both instances, whether wet or dry, would show a certain result. That was all my problem was. The paper was the same in both cases. We used the same paper. All those plaques were selected at random. The paper was the same all the way through. It didn't matter whether it was a wet one or a dry one. The problem was what would be the effect on the wet or the dry paper. It was all the same material to begin with.

Q. But you inoculated them?

A. Yes, some of them, and the controls, as I mentioned in there and showed in the report, were negative and showed sterility, or the death of bacteria.

Q. How do you account for the death of the bacteria on the dry and wet?

A. I suppose the moisture there has a greater sterilizing effect than the dry. That would be the common assumption, I believe, from looking over the report.

Q. Do bacteria grow where it is moist or where it is dry?

A. That depends on conditions. Ordinarily organisms have to have moisture.

1700 Q. Is it not a fact that bacteria will not grow unless they have something to feed on in the way of moisture?

A. Yes, they have to have food and moisture, yes.

Q. And where there is no moisture and no food, how are they going to exist?

A. They do get moisture to a certain extent, to exist.

Q. That is from the air?

A. To a certain extent, but it might be from the medium.

Q. You refer to the plaque?

A. No.

Q. Just taking a plain plaque, where are they going to exist, if the plaque is devoid of moisture?

A. It is not entirely devoid of moisture. It has been in the oven. That took a certain amount of moisture out of it. Whether it is completely dehydrated, I do not know.

Q. But you did not perform any test to ascertain that?

A. No. But you could see readily here that paper board subjected to dry heat would become dryer than one sitting in a moist container. I think you can assume that.

Q. This test that you performed, then, was not designed as a test in order to show the bacteria on the original board, was it?

1701 A. No. In other words, the inoculation there did not make a great deal of difference. That was not the problem.

Q. It was only performed for the purpose of showing the relative killing effect of the bacteria in the paraffin?

A. Yes.

Q. But the quality of the board was not concerned?

A. No.

Q. This was an artificial test you set up in order to ascertain the effect of this paraffin?

A. That is right.

Q. You don't know anything about the paper board being actually used in paper bottles being subjected to the same type of test and inoculation, do you?

A. I don't know to what test they would be subjected in the plant.

Mr. Gariepy: That is all.

Mr. Schaefer: That is all.

(Witness excused.)

Mr. Schaefer: Mr. Reporter, will you mark this Defendants' Exhibit 22 for identification?

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 22 for identification.)

1702 Mr. Schaefer: It is stipulated between the plaintiff and the defendants in this case that the letter which has been marked Defendants' Exhibit 22 is a true copy of a letter sent by Mr. S. E. Dean, Sr., president of the Dean Milk Company, to Dr. Herman N. Bundesen, on or about January 13, 1936, and received by Dr. Bundesen.

Is that correct?

Mr. Gariepy: That is right.

Mr. Schaefer: I offer Defendants' Exhibit 22 in evidence.

Mr. Gariepy: I can't quite see the purpose of this, Master, when we have already stipulated that application was made on that date by the Dean Milk Company, that subsequent thereto the Fieldcrest Dairies made application, adopting this application that had heretofore been made, and that subsequent thereto numerous correspondence passed. I typed all this correspondence, about 56 letters, and gave it to Mr. Schaefer.

The Master: This does not hurt you.

Mr. Gariepy: But I don't want any part of it in. Put it all in.

The Master: I will let it go in. It may be received.

1703 (Said document, being a photostatic copy of letter dated January 13, 1936, to Dr. Herman N. Bundesen, from the Dean Milk Company, so offered and received in evidence, was marked DEFENDANTS' EXHIBIT 22 and is attached hereto and made a part hereof.)

The Master: Anything more, Mr. Schaefer?

Mr. Schaefer: Yes, sir, one more exhibit.

Mr. Reporter, will you mark this Defendants' Exhibit No. 23 for identification?

(The document referred to was thereupon marked by the reporter Defendants' Exhibit 23 for identification.)

Mr. Schaefer: It is stipulated between the plaintiff and the defendants that the document marked Defendants' Ex-

hibit 23 for identification is a true copy of a letter written by Mr. George D. Scott, sales manager of the Pure-Pak division of the Ex-Cell-O Corporation, and sent to and received by Dr. Herman N. Bundesen, president of the Board of Health of the City of Chicago on or about August 2, 1938.

Is that correct?

Mr. Gariepy: Let me see it, please.

Yes, this is a letter that George Scott sent to Dr.

1704 Herman N. Bundesen on August 2, 1938.

Mr. Schaefer: I offer in evidence Defendants' Exhibit 23.

The Master: It may be received.

(Said document, being a letter dated August 2, 1938, to Dr. Herman N. Bundesen, from sales manager, Pure-Pak division, Ex-Cell-O Corporation, so offered and received in evidence, was marked DEFENDANTS' EXHIBIT 23, and is attached hereto and made a part hereof.)

Mr. Schaefer: That is all today, sir.

The Master: Do you rest now?

Mr. Schaefer: No. I would like to go ahead tomorrow.

The Master: Will you be able to start at 9:30?

Mr. Schaefer: Yes, I think so.

The Master: All right, 9:30.

Whereupon an adjournment was taken in the above entitled cause to 9:30 o'clock a. m. of the following day, Thursday, October 12, 1939.

1705 • • (Caption—) • •

Thursday, October 12, 1939,
9:30 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

1706 Mr. Schaefer: It is stipulated between the parties hereto, by their attorneys, that in making the bacterial counts reported in Plaintiff's Exhibit 59, Dr. Martin J. Prucha used a new nutrient agar, described in the seventh edition of Standard Methods for the Examination of Dairy Products, published by the American Public Health Associ-

ation in the summer of 1939. He used this same type of agar in performing the experiment recorded in Plaintiff's Exhibit 51. In general, the new nutrient agar gives higher counts than the old standard nutrient agar. It is known that at times this new nutrient agar gives twoce as large and even larger counts. If you take all of the counts reported in Plaintiff's Exhibit 59 and, roughly, divide them by two, you will have approximately what the old standard agar would have given.

Is that satisfactory?

Mr. Gariepy: That is o. k.

Mr. Schaefer: Will you take the stand, Doctor?

The Master: Dr. Arnold has been sworn, I believe.

Dr. Arnold: Yes, sir.

1707 LLOYD ARNOLD called as a witness on behalf of the defendants, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Schaefer.

Q. State your name, please.

A. Lloyd Arnold.

Q. And where do you live?

A. 5844 Stony Island Avenue.

Q. What educational institutions did you attend, Doctor?

A. I received a Bachelor of Arts degree and a Master of Arts degree from the Texas Christian University at Fort Worth, Texas. The latter degree I received in 1908.

Q. Did you attend any other educational institutions?

A. In 1908 I went to Tulane University Medical School in New Orleans. I was there two years as a medical student. Then I went to the University of London and Oxford University.

Q. Those are both in England?

A. Those are both in England. I was there a year. Then I went to Germany for three years.

Q. What school did you attend there?

1708 A. I was in Hamburg, Germany at the Institute of Tropical Medicine, and I was in the University of Goettingen and the University of Munich and the University of Tuebingen.

Q. How long were you there?

A. I spent three years in Germany. I left Germany in 1914.

Q. Proceed.

A. I returned to this country, and I was at Vanderbilt University in Nashville, Tennessee, teaching and finishing up my medical course. I finshed there in 1919.

Q. What degree did you receive there?

A. The M. D. degree.

Q. Doctor of Medicine?

A. Yes, sir.

Mr. Gariepy: What year was that, 1919?

The Witness: Yes, sir.

Mr. Gariepy: M. D.?

The Witness: Yes, sir.

I then became superintendent of the Nashville City Hospital and pathologist at the Nashville City Hospital and instructor of internal medicine at Vanderbilt University.

Mr. Schaefer: Q. How long did you continue there?

A. I was there for one year. I then came to Chicago, as professor of bacteriology, pathology and public health
1709 at the Loyola Medical School, which position I held until 1925.

Q. What did you teach at Loyola University Medical School, Doctor?

A. I taught bacteriology, pathology and laboratory methods of clinical diagnosis. As head of the department at Loyola I was in charge of the laboratories of the affiliated Catholic Hospitals, including Mercy Hospital, St. Bernard's Hospital, St. Anne's, St. Elizabeth, and Misericordia.

Q. Did you also teach courses in public health?

A. Yes, sir, I taught courses in public health also.

Q. For how long did you remain in that position at Loyola University?

A. I remained in that position until 1925.

Q. Then what did you do?

A. During my summer vacations while I was at Loyola I attended Columbia University, the Lamar School of Public Health at Columbia, and worked in sanitary sciences under Professor Earl Phelps.

Q. How many summers was that, Doctor?

A. Three summers.

Q. Then what did you do?

A. Then I accepted a position at the University of Illinois as associate professor in bacteriology and public

1710 health. A year later I became full professor, in charge of the department of bacteriology and public health at the University of Illinois College of Medicine.

Mr. Gariepy: What year was that?

The Witness: 1926. In 1927 I became full professor.

Mr. Schaefer: Q. What position do you now hold?

A. I hold the same position.

Q. At the University of Illinois?

A. At the University of Illinois College of Medicine.

Q. What are your duties there?

A. My duties there are to teach bacteriology to medical and dental students and public health to medical students. I also have about thirty-five graduate students who are taking higher degrees in bacteriology and public health.

Q. Are you a member of any professional and scientific societies?

A. Yes, sir, I belong to about fifteen.

Q. Can you enumerate some of them?

A. The American Medical Association, Chicago Medical Society, The Institute of Medicine of Chicago, the American Society of Bacteriologists, the American Society of Immunologists, the American Public Health Association, the American Association of Food Technologists, and sev-

1711 eral others.

Q. Have you ever had any connection with the State Department of Public Health of the State of Illinois?

A. Yes, sir. From about 1927 to 1928 I was bacteriologist and consultant to the State Department of Public Health. I might say that my contract with the Board of Trustees of the University of Illinois is for 80 per cent of my time. Twenty per cent of my time is my own to do with as I please, as is customary for such professors in medical school.

Q. What has been the nature of your work with the State Department of Public Health, Doctor?

A. I had two duties with the State Department of Public Health. I organized and started a Chicago branch laboratory, serving the northern third of the state, in 1927. I was in charge of that laboratory. My other duties were as consultant to the director in problems arising of a public health nature in the state.

Q. Have you had any occasion to assist in the formulation of rules and regulations for that department?

A. For the last twelve years I have been a member of a committee appointed each year by the director of the State

Department of Public Health to formulate rules and regulations, which are, in fact, the sanitary code in regard
1712 to the control of communicable diseases in the State of Illinois.

Q. Have you had occasion to engage in any independent research in bacteriology, in addition to your work at the University that you have mentioned?

A. Yes, I have done considerable investigation work in the field of bacteriology.

Q. To what matters did that work pertain, Doctor?

A. It pertained to most all of the fields of bacteriology. The identification of bacteria, investigation of new diseases, whether bacteria or virus, the nature of new diseases that might occur, as well as problems in public health dealing with administration, vital statistics, and so forth.

Q. Are you a member of the Board of Health of the City of Chicago?

A. Yes, sir. I became a member of the Board of Health of the City of Chicago in the first part of December, 1938.

Q. In addition to serving as a member of the Board of Health of the City of Chicago, have you performed any other duties for the Board of Health?

A. Yes, sir. The Board asked me to assume responsibility for the dairy division of the Chicago Board of Health at the time leave of absence was granted to Mr.
1713 Krueger and Mr. Guerin, which was about the time I became a member of the Board.

Q. What has been the nature of the duties during that period of the leave of absence of those gentlemen, Doctor?

A. My duty was as the administrative and enforcement officer, in charge of the dairy division, which includes the milk shed, receiving stations, pasteurization plants and the distribution of milk in Chicago.

Q. That work began, you say, in December of 1938?

A. Yes, sir, early in December, 1938.

Q. Do you receive any compensation as a member of the Board of Health?

A. No, sir.

Q. Do you receive any compensation from the city of Chicago?

A. Yes, sir.

Q. For the work which you have done in connection with the dairy division?

A. Yes, sir.

Q. Of the Board of Health?

A. Yes, sir.

Q. And at what rate do you receive compensation?

A. Five hundred dollars a month.

The Master: Q. How does your work as a professor of bacteriology at the University of Illinois differ from that of Dr. Prucha?

A. Dr. Prucha is in the dairy division, Master. He
1714 deals with the bacteria associated with milk and milk products in the Department of Agriculture. My duties are in the College of Medicine and the College of Dentistry, dealing with disease producing bacteria, methods of diagnosis, methods of treatment and methods of prevention.

Q. I see.

Mr. Schaefer: Q. Will you enumerate some of the duties which you have performed, Doctor, as consultant to the Board of Health, in charge of the dairy division?

A. All violations reported by the division, by the inspectors, or determined by the inspectors in their routine work, were reported to me. I usually held conferences with the individuals whose permits were issued by the Board and who were in violation, to ascertain the reasons for it and to get compliance with our regulations.

Every afternoon, daily, I was engaged in such activities. I met with the inspectors rather frequently, in groups, to discuss their problems and instruct them in public health methods of the control of milk and milk products. Then new problems coming up in the health department concerning the dairy division were submitted to me for recommendations. There was quite a variety of those.

1715 Q. Have you done any work with respect to the ordinances of the city and the regulations of the Board of Health, with respect to milk and milk products?

A. Yes, sir.

Q. What has been the nature of that work?

A. In 1940, it will be necessary for the City of Chicago to revise their ordinance for mlik. Inasmuch as our time is up with the United States Public Health Service, we will have to revise it. I think every four years we have to bring it up to date, and I have given considerable time in the last few months to revisions of the new ordinance and various parts of the ordinance which will require revision and probably some fundamental changes in our ordinance structure.

The Master: Q. What do you mean, your time is up?

Is there any obligation in connection with the United States Public Health Service?

A. No, sir. The only obligation, Master, is that there is considerable protection to a municipality that operates under the United States Public Health Service ordinance and code. In case there is an epidemic or in case there is any difficulty, you have the United States Public Health Service model code to go on, and it puts you in a
1716 little stronger position than if you are independent of the federal code.

Q. What do you mean by stronger position? As to what?

A. A stronger position, that you are doing the right thing in the right way.

Q. In other words, you follow them as a good example, is that it?

A. Yes.

Q. There is no obligation to it?

A. No obligation at all. We sometimes exceed their recommendations, that is, we make them more stringent in some respects, and sometimes we do not make them as stringent.

Q. And why do you say there is a time limit of four years?

A. Because the United States Public Health Service regards the control of milk as an ever changing condition. As methods improve, as knowledge increases, they want to change the code to conform to the later information available, and they require, if you are going to operate under their code, to remodel it at certain definite periods, and I think it is every four years.

Q. Do they require or do they merely advise?

A. They merely advise. In other words, we could not have a United States Public Health Service rating in
1717 Chicago if we did not operate under the code.

Q. What difference does it make to you whether you have a United States Public Health Service rating or not?

A. The difference is really a competitive difference, Master. The cities like to show that they have a good sanitary milk supply.

Q. Just a matter of internal satisfaction?

A. Yes, sir. And if the United States Public Health Service says you are 98 per cent perfect in your milk supply, that is better than not having anything. That is just the sum and substance of it.

The Master: Go ahead, Mr. Schaefer.

Mr. Schaefer: Q. The matter of whether or not the milk ordinance of the city of Chicago will be revised in 1940 and what form that revision will take, if a revision is made, is a matter of determination by the city council of the city of Chicago, is it not, Doctor?

A. Yes, sir.

Q. Are you familiar with the operation of paper mills which manufacture paper board for use in milk containers, Doctor?

A. Yes, sir.

Q. What, in your opinion, are some of the impor-
1718 tant public health problems in connection with the sanitation of paper mills manufacturing paper for use in milk containers?

A. I should consider the problem of the raw material, the problem of the water supply and the physical equipment of the mill, the manual handling of the product and the storage and wrapping or the preservation of the final product, as the most important problems.

Q. You mentioned the raw material, Doctor. From the point of view of the protection of the public health, what if anything is the sanitary significance of the type of raw material used in paper mills manufacturing paper for use in milk containers?

A. I think the raw materials should be obtained from wood or logs which is virgin stock. The classification of that, whether it is spruce or pine, is immaterial from a public health standpoint, although spruce is used in paper containers because of the stability or rigidity of the fibres.

The logs should be seasoned, healthy logs, that is, healthy in that they should not have areas of injury on the surface, mould or a growth which causes a depression in the log, and this mould or depression is filled with what we call pitch. It is a resinous material secreted in the tree to
1719 prevent invasion by blight or mould from the outside. These pitch pockets contain large numbers of bacteria, many moulds and yeast, and the pitch pockets should be cleaned out by a machine that reams out the pitch pockets.

I think the logs should be stored, or the wood pile should not rest on the ground; it should rest on a cinder bed. If it rests on the ground, rain or melted snow wets the logs, dripping down to the bottom, and it gets the ground wet. The sun does not get to it. It stays moist, and sometimes the

logs at the bottom have whiskers of mould, and it is not proper, from a public health standpoint, to use such grossly contaminated logs.

If there is a cinder bed at the bottom, of about two feet in thickness, that will drain off the water. It is porous. It does not permit the mould and blight growth at the bottom of the log pile.

I think there should be a log washer. That is a mechanical device that scrubs and washes the logs.

Then they are dipped in a copper sulphate solution, which is for the purpose of destroying moulds and blight and yeast usually on the surface of logs stored in the open air and subject to moisture conditions.

1720 Q. You say that is done or it should be done?

A. It should be done. It is done in some places. It should be done everywhere.

When the matter of reused material is added to the raw products or substituted for the raw product, the problem there is—

The Master: Q. What do you mean by reused material?

A. I mean raw material that has been made into paper and then this paper put back into the system and disintegrated and used again, reused material.

We can classify reused material, ordinarily, in paper work, in three groups. One is broke, one is trim and one is chip.

Now, the broke, as the name indicates, is when the sheet breaks in its formation. When the mill keeps running, there is an accumulation of irregular pieces, different lengths and szies and irregularities, that are thrown back into the original stock again. That is called broke. If this broke is handled carefully, there is no objection to it from a public health standpoint, but if it is allowed to fall on the wet floor, the floor happens to be dirty, there is tracked-in mud or tobacco juice—that is, you cannot smoke in

1721 a paper mill and there is plenty of tobacco juice—then the broke becomes rather an unsanitary material. But if it is prevented from being contaminated with dirt, dust or moisture, it can be used again without any sanitary hazards.

The trim comes from the conversion departments. When the blanks are stamped out, there is always some reserve material. That again, if it is handled properly, baled immediately and protected and stored in a sanitary place, can be used without any public health hazard.

The chip is waste paper, collected from all sources and under all conditions, collected from alleys, streets, office buildings. Newspaper print and all sorts of material go into chip. That has no place at all in a mill that is making paper for milk storage and distribution.

Mr. Schaefer: Q. You mentioned the water supply, Doctor, as a matter of significance. From the point of view of the protection of the public health, what if anything is the sanitary significance of the type of water supply used in paper mills manufacturing paper for use in milk containers?

1722 A. I think the water supply is very significant, not only the fresh water coming in, but the recirculated water inside the mill. There is about ten times as much water in circulation in the mill as is brought into the mill at any particular hour or day.

Now, the fresh water that comes in seldom meets drinking water standards. It is usually water that is cheaper than the municipal water supply. Only those located where they can have mountain water or artesian water have really water that meets drinking water standards.

The water is usually filtered, that is, for commercial purposes, to prevent spotting of the paper, and it is chlorinated to destroy the bacteria.

Fresh water, clean water, requires only a small amount of chlorine. One or two parts per million will reduce the bacterial count to a satisfactory level in pure, clean water. But as soon as that water is put into the mill and is mixed up with the pulp, the pulp very rapidly takes the chlorine out. The chlorine combines with the organic material in the fibre.

It is necessary to recirculate water in the mill, because in the formation of the sheet of paper the water running off from the paper machine contains some fibres in

1723 suspension.

If this is dumped out in the sewer, the mill will lose several tons of pulp per day. In order to save that dissolved, suspended pulp, they reuse that water, which they term a closed system. Almost all mills use the closed system, to economize on the suspended pulp in the used water. This goes over and over again.

This closed system is a bacteriological culture medium. The water is usually warm, around 100 to 110 degrees Fahrenheit. With the pulp in suspension and soil bacteria that usually get in through the water or through the pulp,

we have a bacterial culture and the build-up of culture in the closed system, built up to several hundred thousand or even million bacteria per cc of the closed system. If one considers that there is sometimes twenty to fifty thousand gallons of water in the closed system, the bacterial population in it would be a tremendous number.

That could be prevented by the use of continuous chlorination of the closed system. Ordinarily we use ammonia along with chlorine, which prevents the chlorine from being dissipated or being used by the pulp too rapidly. It
1724 stabilizes the chlorine. It is what is known as chloramine, which is a mixture of chlorine and ammonia.

With a continuous supply of chloramine fed into the circulating system, one can reduce the bacteria to a low level, that is, within sanitary and public health safety factors.

Ordinarily, the amount of fresh water brought in equals the amount of overflow water. They try to keep their closed system full, and as the water flows out fresh water comes in, and the amount will vary tremendously from hour to hour, depending upon the overflow system.

Q. Will you describe the overflow system, Doctor?

A. The overflow system is in two parts. Part of the fresh water coming in is used for washing and cleaning purposes and is used for cooling purposes. That is all overflow. Then there is a certain amount of overflow from the closed system, which they are trying to minimize, because that contains valuable stock, and it will go out in the sewer instead of into the paper sheet.

Q. I think you mentioned the physical equipment of the mill as a matter of sanitary significance. From the
1725 point of view of the protection of the public health, what significance, if any, do you attach to the physical equipment of a mill manufacturing paper for use in milk containers?

A. I think the physical equipment is an important factor from a public health standpoint. The physical equipment will vary with the type of pulp used, that is, whether it is mechanical pulp or chemical pulp, or whether it is a mixture of both. It also varies as to whether the mill makes its own pulp or buys the pulp already prepared. There are all variations between those in the various mills.

In principle, it consists of a series of vats or tanks in which the pulp in solution or in suspension in water is stored.

The principle of paper making is to disintegrate the wood into small individual fibres, suspend these fibres in the water, and then by means of a woolen belt, which they call felt, a felt belt which is made of Australian lambs wool, long fibres—probably the best wool on the market—these long fibres sticking out from the big flannel belt, goes through a pan containing fibres in suspension in water. There is about five per cent pulp and 95 per cent water.

1726 As this flannel belt goes through there, it picks up fibres on these rough pieces of wool that stick out, and that is the way the sheet is formed. It goes from the felt on to the dryers.

Now, referring to the vats, the whole system of the vats is to use the mixing of the water with the fibres, increasing the dilution each time through a beater system, or pulpers, and various mechanical means, in order to get a uniform distribution of fibres in a low dilution of water.

Most of those vats are cement vats, made of cement. Cement vats are objectionable, because the inner surface is rough, and as a vat full of pulp is emptied the pulp tends to stick along the sides of the vat, because it is rough, and holds it. The vat will remain empty for a couple of days, and is filled up again, and there is a coating of dry pulp on the inside. That is many times repeated, until there is a build-up of several inches of pulp on the inside of the vat. This pulp grows bacteria, slime, and becomes quite a source of annoyance to the paper mill, and it is important from a public health standpoint, in that it feeds into

1727 the closed water system a high content of bacteria. It acts as a reservoir for bacteria.

If these cement vats are lined with glazed tile, it makes a much more sanitary part of the physical equipment, in that the pulp, or, as the paper men say, stock, does not build up on the sides of the vat and does not act as a reservoir for bacteria feeding into the system.

The pipes should be of copper. Iron pipes act like the cement. The insides of an iron pipe will cause a few fibres to adhere, and they will build up and build up, and the joints and angles and elbows of the pipe build up bacteria very fast.

The bacteria and mould and things that go in the so-called slime that is building up on the inside of the pipe act on the iron, and that build-up is sometimes as black as a piece of coal, containing numerous bacteria; and that is the typical slime spot in the finished paper. It is usually a

mixture of iron pigments from the iron pipes, with the slime that is built up on the inside of the pipes.

There are so many variations in the physical equipment, the screens and the various pulping machines,
1728 that they hardly need any comment.

The next piece of equipment of importance is the paper machine itself. A paper machine is divided into two parts, what we term the wet end and the dry end.

The wet end of the paper machine is that part of the machine where these felts are picking up fibres from the dilute fibres in water. The number of felts in circulation will depend upon the thickness of the sheet that is being formed on the machine at that time. The felts pick up the fibres with the water and then squeeze it out, as they go through the rollers. So the felts can build up a great number of bacteria in the felts.

At periods of close-down, the wet end of the machine should be filled with a chlorine solution and the felts run through it or cleaned, to disinfect them.

From the felts the sheet passes on to the dryers. There is a space between the felt system or wet system of the machine and the dry system. This space is bridged over by a sheet that we term a wet web. Now, the wet web is the sheet that is strong enough or at least has enough fibres in
it, with part of the water out, to stand by itself and to
1729 be a sheet.

Then it passes over to the dryers. There is usually about 70 per cent water and 30 per cent fibres in the wet web. Then it goes to the dryer system.

Now, the real characteristic of the mill is its dryer system. Everything else is about constant.

Now, the dryer system has been referred to in previous testimony as hot cylinders.

The Master: Q. Hot what?

A. Hot cylinders. They are really dryers in the paper manufacturing language. These are heated by steam and are pressed against each other with a certain pressure.

The purpose of the dryer system is dehydration. When the finished paper comes out, it is about five per cent wet and 95 per cent fibres. When it starts in at the beginning of the dryer system, it is 30 per cent fibre and 70 per cent water. The dryer system is for the purpose of reducing the water to about five per cent.

If there is a larger dryer system, say 80 to 100 dryers,

which is a large dryer system, the sheet will go through very fast, and the production will increase. If there are
1730 half that many dryers, the sheet will go through just half as fast, as the purpose of the dryers is to reduce the aqueous content of the wet web to about five per cent moisture.

The dryers usually have an artificial ventilation above them, so as to prevent the accumulation of moisture on the ceiling. On the top of the dryer system, where we have hot air and water evaporated, it would add right back to the dryer again, and soil the sheets or spot the sheets. So they usually have artificial ventilation or a blower system over the dryers. That blows the air from the outside on to the top of the dryers and that is pulled off by negative pressure, to keep a rapid circulation of air over the dryers, to prevent condensation of water.

This blower system and artificial system of ventilation should be filtered air. If it is not filtered, then the amount of bacteria deposited on the sheet in its formation will vary according to atmospheric conditions. If it is a dry, windy day, there would be a great number of bacteria in the air. If it is a quiet day, with no wind, and after a rain, there will be very few bacteria in the air. So the surface contamination of the sheet will vary with atmospheric conditions, unless there is filtered air used in the artificial ventila-
1731 tion of the dryer system.

Then from the dryers they pass on to what they call a calender. On the calender stacks water is sprinkled on the sheet and pressed through a cold steel process—they are in cylinder form—for the purpose of putting a gloss on the surface of the sheet, and it also renders the surface of the sheet partly water resistant. It is just a very thin, hard, shiny layer over the sheet of paper. There is no heat used in the calender stacks, and the water in the calender stacks should be sterile, because any bacteria added or in the water in the calenders will be added to the finished product.

From the calenders it passes over the rollers, and it is either rolled in rolls or is cut in squares.

The entire system is considered a closed system, because of the closed water supply and the reuse of the water and the reuse of the pulp.

In a mill running paperboard for milk containers, that makes other paperboard, oftentimes of less sanitary quality, there may be a mixture of the two pulps.

If, for instance, they are making a side-
1732 wall board for boxes or for some purpose for which there is little need of sanitary control, they usually use chip board in those cheaper or what I might say carton-like products.

If we get the system filled with chip board, which has a very high bacterial count, and then we start running virgin pulp through it, it takes several hours to work out all of the chip board and produce a sanitary sheet, although the sheet may meet all specifications as to color and thickness and consistency, but it will have a very high baeterial count, until the chip is worked out of the system.

Q. You mentioned as a matter of public health significance, Doctor, the matter of manual contact in the paper mill. What is the sanitary significance of manual contact with paper in paper mills manufacturing paper for use in milk containers?

A. That is of relative importance. It is a minor problem, because the amount of manual handling in the mill is very small compared to the manual handling later on in the conversion period.

There are usually about three, not more than four men
on the dry end of the paper machine. It is usually a
1733 mechanical process, and it is only when difficulty arises, like a break, where there is manual handling, or when the paper is being rolled there is sometimes manual handling if the roller stops.

The amount of manual handling will vary on the finished product, as to whether it is in squares or in cylinders or rolls. The squares, of course, are exposed more, because they have to be cut and stacked. That is done to a great extent mechanically, but there are still the edges and tops that are sometimes touched, and there is a greater hazard where there is a second operation than where the primary operation of rolling or in rolls is the only one carried out.

Q. You mentioned the matter of storage of the paper as a matter of public health significance, Doctor. From the point of view of the protection of the public health, what is the sanitary significance of the storage and packaging of paper in a paper mill?

A. If the paper comes out in rolls, there is little advantage in wrapping it, because the outside of the roll is usually soiled in rolling it to the storage or trucking it, and in the conversion the outer two laps are thrown away,

because they are dirty. They form a seal. The edges
1734 are usually touched by hand, but the stamping operation usually eliminates the edges anyway.

Some of the mills wrap the rolls. It depends upon the distance of conversion. If they have to be shipped by train or truck, they should be wrapped. If the conversion unit and the mill are in the same building, the rolls do not have to be wrapped. They can be trucked over to the conversion unit.

In the wrapping they should be wrapped securely and kept dry. In the wrapping the quality of the wrapping paper should be such as not to contaminate the clean sheet. I mean by that, if we have a wrapping paper made of chip board, that would be unsatisfactory, but if the board has a liner, or what we call kraft—kraft is southern pine, a very economical article—if it is lined, it will prevent the bacteria in the chip from coming in contact with the finished paper in the storage and handling, which would be satisfactory from a public health standpoint.

Q. Is the manner of handling paper board for use in paper milk containers, while that board is being transported from the paper mill to the plant where it is converted, of any significance from a public health point
1735 of view?

A. Yes, I think it is.

Q. Why is that a matter of public health significance, Doctor?

A. Because in transit it depends upon the cleanliness of the truck, the box car, the flat car or whatever it is they are transported in. It depends upon how securely it is wrapped. If it becomes unwrapped or torn, then the sheet is exposed to damp conditions, rain, snow, and also exposed to handling by the employees, or even walked on, getting dirt from the shoes, and various other things, unless it is wrapped securely. It should certainly be protected from moisture, because moisture, plus dirt, will support bacterial growth on the surface of the paper.

If it becomes unwrapped, then it becomes a public health hazard in the massive exposure to contamination, not only from dust and air, but also from human contact during transportation and handling.

Q. From the point of view of the protection of the public health, Doctor, what are some of the important problems in connection with the cutting, scoring and printing of paper for use in milk containers?

A. Cutting, scoring and printing is a part of the conversion of the paper. It is a part of the process of
1736 converting the continuous sheet into a finished product.

The important factors there, from a public health standpoint, are the storage conditions in the converting plant of the finished material received from the mill.

Again, there, it should be stored in a clean, dry, light space, free of cockroaches and rats and mice and vermin of all kinds. It should be wrapped to protect it from contamination.

It is quite true that the edges of the sheet, if it is in a flat sheet, or the edges or ends of the rolls, do not go into the finished product, but nevertheless, the workman or the man putting the rolls on the machine touches the ends and then he touches the finished product; he adjusts the sheet, and he conveys from the exposed edges the bacteria accumulated on to the sheet that goes into the finished product, and the exposed edges, although they may not of themselves be part of the finished product, should be protected from contamination for that reason.

Q. Is there any sanitary problem in connection with the printing of paper containers for milk?

A. Yes. The printing is usually a second operation. The first operation is the blanking or the cutting out.
1737 That is usually done automatically by a machine.

There is a minimum health hazard as long as the machine operates 100 per cent efficient, but when it jams or stops, then the operator has to pull out the container, and he is very careful to inspect the first few that come through after he starts over again, and he inspects the last that went through, to see that they are in good shape. The health hazards there are associated with the mechanical imperfection of the blanking machine.

If the paper container to be manufactured is square, there is what is called a scoring operation. If it is a circular container, it is not the scored. The scoring operation is an operation whereby a depression is made in the sheet, so that it will bend easily over that depressed area.

Again, the scoring operations have the same health hazards that the blanking operations have, which are only associated with the imperfection of the machine, the number of times that it has to start and stop again.

Now, the printing operation is associated with more health hazards, because as the blank is printed and stacked, if there are very many blanks stacked on
1738 on top of each other the pressure is so great that offsets will occur, that is, the top of one blank will print on the bottom of the blank above, so to prevent offsetting they never stack the blanks very high when they come off the printing machine. Twenty or thirty blanks are plenty. Sometimes not that many.

So that as a result they are very frequently picking the blanks up and handling them, and there is more handling in the printing operation than in either the blanking or the scoring operation.

These blanks then are usually kept about 24 hours. Before they are wrapped or before the conversion is finished, if it is all finished in one plant, they should be protected from dust and dirt and they should be covered. The covering also protects them from human contact, so no one lays hands on them, dirty hands, or does any sneezing or coughing around them at all.

Q. Is the type of ink used a matter of public health significance, Doctor?

A. Yes, sir, I think it is. I think the ink used should be as free of toxic material as possible.

The Master: Q. Free of what?

1739 A. Of toxic material, poisonous material, as is possible.

Q. Yes.

A. Most of the inks do contain some heavy metals as part of the dryer in the ink or part of the vehicle of the ink. The matter of offsetting, that is where the printed top of a blank comes in contact with the unprinted bottom or inside, presents some public health problems, and if this occurs with regularity or very frequently you really have on the inside of the blank, next to the milk, a material that is toxic. It is in small dilution, a very small amount, but a very small amount of heavy metal ingested over a long period of time is certainly a health hazard, and particularly a health hazard for the infant and the young child.

Mr. Schaefer: Q. Are there any health hazards associated with the forming of paper milk containers?

A. The forming of paper milk containers is divided into two phases. There is one group of containers where the entire conversion takes place in one plant. They leave

that plant as finished containers, ready to be filled in the dairy.

The other group, after the printing operation, after
1740 they are blanked, scored and printed, those flat blanks are shipped to the dairy and the conversion is finished in the dairy.

I think the same general principle of prevention of human contact and the avoidance of any contamination from air, dust, moisture, should hold for both of the forming processes, whether they are in the same plant or in another plant.

Q. Is the type of adhesive used or applied in forming the container a matter of public health significance?

A. Yes, sir, I think it is. We can divide our adhesives used into three groups.

One is the so-called protein adhesive. That consists of animal glue and casein. Animal glue is a by-product of the packing house industry and should never be used on a food container. Animal glue is a by-product of what we call tankage. Tankage in the packing house industry is condemned carcasses, not fit for human consumption, that the federal inspectors of the United States Department of Agriculture condemn, and they go into a tank and are boiled out. This animal glue is a by-product of the tankage material. It is usually highly contaminated and may contain even lock-jaw bacillus germs and any other germs.

1741 The other type of protein glue is casein, which is a by-product of the skimmed milk industry. The lactose, milk sugar, and casein and milk protein, are recovered from skimmed milk for commercial purposes. Casein usually contains many bacteria. It is a good culture medium and contains several thousand bacteria per gram or even several hundred thousand per gram, of the dried material. Casein is used in milk containers. Some milk containers have casein glue on them.

Now, the other type of glue are the starchy glues, which are of corn starch, tapioca and various types of starchy materials. These glues will support bacterial growth. They are not as grossly contaminated as is casein glue, and there is very frequently an antiseptic of some kind added to the starchy glues to prevent bacterial growth.

The Master: Q. How many kinds of glue have you now? You have the animal glue, the casein glue and what other?

A. The starchy glues.

Q. Yes.

A. The other class of glues are the resin glues, or what is termed in the industry high melting point glues. They are really thermo-plastic substances. They are artificial resin material, which when heated to 250 or 300 de-
1742 grees Fahrenheit, is liquid. On cooling they become solid, and they form a gluey mass, with an adhesive surface, and are very effective adhesives, and are perfectly safe, as the temperature to which they are applied sterilizes them.

Those are the three types of glues,—protein glues, starchy glues, and the resin glues.

Mr. Schaefer: Q. Do the resin glues look like the material that you find on the top of a bottle of Scotch?

A. No, I don't think they do. They are much thinner. They are colorless. Looking at a container you cannot tell any difference between the resin glues and any other group, after you open the seam.

Q. Is the matter of the physical condition of the employees in a conversion plant a matter of public health significance, Doctor?

A. Yes, I think it is.

Q. Why?

A. It is much more significant, the matter of the health of the employees and the health habits of the employees in the conversion plant, than it is in the paper mill, because in a paper mill there are only about three or four
1743 employees on the dry end of the machine. They make tons of paper a day. In the conversion plant there are several hundred employees in proportion to each one in the paper mill that comes in contact with the product. Their state of health and their habits of cleanliness is a very important factor in preventing contamination of the product.

In the conversion, our health problems there are to prevent the contamination of the product with human bacteria, that is, with bacteria from the nose and throat, bacteria from the feces and the urine, which from a health standpoint are very dangerous bacteria, because accompanying those bacteria are the bacteria that produce disease in man, and the contamination during conversion or at the last steps of the conversion process with human bacteria has real major public health significance.

Q. Is the matter of hygenic facilities and practices in the conversion plant a matter of public health significance?

A. Yes, sir. You cannot expect employees to keep their hands clean unless you provide convenient facilities for doing so.

An employee working on a piece basis, getting paid by so many pieces of work an hour, so many containers
1744 an hour, to expect him to spend ten or fifteen minutes going to some distant place to wash his hands,—why, he just does not do it.

The washing facilities should be at hand and very close at hand, and the employees should be relieved at least every two hours, probably every hour, to allow him or her to clean their hands and wash them and keep them from becoming contaminated, and thereby contaminating the product. A clean hand is a safe hand. A dirty hand is a dangerous hand.

Q. From a public health point of view, Doctor, what matters are of significance with respect to the paraffining of paper milk containers?

A. I think the type of paraffin used, that is, the quality used, is an important factor.

The process in the industry is called waxing. It is a waxing process. In the manufacture of food containers in general they use waxes of various kinds. They do not always use USP paraffin. They use lower grades in their waxing procedures. For milk containers I think it should be a USP paraffin, which is pure paraffin, and the paraffin should not be oxidized to acid products or other unknown materials which vary in concentration, according to time of heating or amount of oxidation.

1745 Q. Is the shape of the container a matter of significance with respect to the effectiveness of the application of paraffin?

A. Yes, I think it is. No matter whether the container is round or square, there is always a seam in it, where the edges are lapped over, forming the package. That is a side seam.

This side seam has two thicknesses of cardboard, overlapping, with a glue between the two, giving a relatively thick area, as compared to the remaining part of the container.

As this container is dipped into hot paraffin, inverted

and allowed to drain out, the double-lapped board retains the heat longer than does the rest of the container, because of its thickness; it holds the heat longer. In holding the heat longer, the paraffin remains liquid longer over the seam, which tends to decrease the amount of paraffin that solidifies over the thickened seam.

The second factor and one which I think is of equal significance is that there are two open ends at the seam, that is, the ends of the board.

Now, in the calendering operation, in the glossing operation, the surface is hardened and smoothed by a
1746 tremendous pressure in these dry, cold cylinders. That gives a gloss and a hardened area to which paraffin sticks very well, but at the ends of the container are fibres that are open and the whole mass of the paper board is open, it is not calendered at all, so as long as the paraffin is liquid it goes into the board at the ends, and we have two ends which are pulling on the liquid paraffin by capillary attraction into the board, so we have both factors that tend to limit the thickness of the paraffin layer over the seam area.

Another matter of public health significance is the glue that is on just that area where we have the thinnest coating of paraffin or the most imperfect coverage of paraffin almost anywhere in the container.

Then the other areas are the corners of container, if it is a square container. In the scoring operation there is simply a depression or a trough pressed into the board, so it will bend easily at that point. In the scoring or the bending of the paper the cellulose fibres or strands that cross over this area are fractured or broken during the bending of the paper at right angles. If you look at that with a magnifying glass, either the outside or the
1747 inside of the angle, you find fine fibres sticking up, like hairs on the head, just little fibres sticking up, and the reason for the imperfect paraffining at those corners is the fact that these open fibres fill up with paraffin, like the open ends at the seam, and the liquid paraffin, as long as it is liquid, tends by capillary attraction to go into these broken ends of the fibres. So it really comes down to the point that the surfaces that are imperfectly paraffined are usually the surfaces that are not covered by the calendering operation.

Sometimes there are areas on the bottom of the con-

tainer that are not properly covered with paraffin. Those are usually caused by some imperfect die, used in forming the container. If the die is roughened on the bottom and the container is formed around it and is pressed against the bottom, that roughened die will fracture or break the calendered surface, and again we have exposed fibres that have not been smoothed down in the calendering operation. The paraffin there will be thin, and sometimes, if there is considerable injury to the fibres, all of the paraffin will be absorbed into the board.

Q. Is the bactericidal action of the application
1748 of paraffin to paper board affected by the moisture content of the paper board?

A. Yes, sir, it is.

Q. Why is that so, Doctor?

A. Paraffin is an oil, and paraffin without any water in it at all is a very weak germicidal agent, in the general sense of the word. It acts the same as dry heat. Dry paraffin has the same bactericidal power as dry heat.

Q. By dry paraffin, Doctor, do you mean dry hardened paraffin?

A. No, I mean paraffin without any water in it at all, dehydrated, dry paraffin, without any water.

Q. Heated, melted?

A. Yes. The moisture in the board is heated along with the board when it is submerged in hot paraffin. The hot paraffin penetrates very rapidly the surfaces of the board, and as the interior of the board is heated, with this hot paraffin, with the surfaces sealed, and there is moisture present, then we get a similar effect as the flash pasteurization of milk, which is the pasteurization of milk at high temperature for a few seconds. The moisture is imprisoned in the board and is heated by the hot paraffin,
and then we have an aqueous system or water system
1749 of sterilization inside the board, and the greater the amount of water the more rapid will be the bacterial killing time. The less amount of water, the slower will be the bacterial killing time, all other conditions being equal.

Q. Have you performed experiments, Doctor, designed to determine whether or not paper containers for milk are absorbent?

The Master: That is, paraffined containers?

Mr. Schaefer: Paraffined paper containers, yes, sir.

The Witness: A. Yes, sir, I have.

Mr. Schaefer: Q. What type of experiments did you perform, Doctor?

A. I performed one experiment, you might say, in two sections. One was to add a dye to the milk.

Mr. Gariepy: When was this?

Mr. Schaefer: Q. When did you perform these experiments?

A. Those experiments began in about May, 1938, April or May, 1938.

Q. Go ahead with your description of the experiments.

A. A dye was added to the milk in the container. That is, the container was full of milk. It was opened and a dye added. We usually use a red dye.

1750 The container was closed and returned to the ice box for 24 hours. Then it was opened and emptied and rinsed out, free of milk or adhering milk or dye. Then it was opened up and examined. The areas where the milk penetrated carried the red dye with them.

The other experiment was to obtain paper containers filled with milk, empty the milk out immediately, rinse the paper container well with water, to free it of all milk or adhering substances, and then fill it with a weak solution of methylene-blue, or any other common dye. I have used half a dozen different dyes. They all act about the same.

Then leave that in there for one hour or two hours, empty it, again rinse the container free of any adherent material, and open it up and examine it.

In some instances, as in the first test, using the red milk, we rinsed out the container, and then it was filled with methylene-blue, and let set for a couple of hours, and then examined.

In all three of these tests, the distribution of the stain or the dye in the container is approximately the same.

1751 Q. Were all of the containers which you examined absorbent?

A. Yes, sir, all of them.

The Master: This may be a good stopping place for a recess. Suppose we have a five minute recess.

Mr. Schaefer: Very well.

(A short recess was here had, after which the proceedings were resumed as follows:)

The Master: Proceed, Mr. Schaefer.

Mr. Gariepy: If the Master please, there appear to be some very interested spectators in this matter. Mr. Greer, are you one of them here?

Mr. Greer: I am a spectator, and very much interested.

Mr. Gariepy: Are you with the Glass Bottle Institute?

Mr. Greer: I am counsel for the Independent Milk Dealers Association.

The Master: What has that got to do with this, who sits here?

Mr. Gariepy: I want to show who is present. You wanted to know about Dr. Tonney.

The Master: I don't want to know anything.

Mr. Gariepy: Very well.

The Master: I don't think it is any concern of the
1752 court who is sitting here. The only thing about Dr. Tonney is this: The reference was made to him because he seemed to be actively engaged in helping you.

Mr. Gariepy: And Mr. Greer has been talking to Mr. Schaefer during the recess, so he seems to be interested also in the glass bottle proposition.

The Master: I don't think that has anything to do with it. It is not important to me who sits here.

Mr. Greer: I might say to the Master that I am a member of the Bar of Massachusetts and I am interested in similar matters. I asked Mr. Schaefer about what has been going on and he has very kindly given me some information.

The Master: Let us go ahead with this lawsuit here.

Mr. Schaefer: Q. From the point of view of the protection of the public health, Doctor, do you attach any significance to the fact that paper containers for milk are absorbent?

A. Yes.

Q. Why?

A. Well, non-absorbency or impermeable surfaces are required of all milk containers.

Mr. Gariepy: I didn't get the names of those surfaces, impervious or not?

1753 A. Impervious or impermeable surfaces are required of all milk containers from the time the milk leaves the cow until it gets to the consumer. Smooth, impervious, non-absorbent surfaces are required of the milk pail or the milking machine, if that is used, the can that conveys the milk from the farm to the receiving

station, all of the receiving station equipment, the tanks, tank trucks and all of the pasteurization equipment, as well as the final container in which the material is distributed to the consumer.

I think if it is absorbent, then we introduce so many factors as to what it is absorbing, how much it is absorbing, that it becomes quite a major public health problem.

Mr. Schaefer: Q. What effect has absorption with respect to the transmission of material in the paper to the milk?

A. I think it has quite an important effect. When a container is absorbent, as a paraffined paper container, the milk—

The Master: Pardon me. Let us have a recess for a couple of minutes.

(A brief intermission here ensued.)

1754 The Master: Continue.

Mr. Schaefer: Q. Complete your answer, Doctor.

A. The milk will penetrate through the paraffin or, in unparaffined areas, into the paper board. This forms a liquid bridge in which materials can pass in both directions, depending upon pressure, position of container, and so forth.

Then the type of bacteria present in the paper board and on the surface of the paper board becomes a major public health problem with a porous container.

These bacteria can be roughly divided into two groups. One are the soil bacteria, and one are the bacteria derived from human source.

Now, the soil bacteria are bacteria in the ground. Those bacteria have been in the ground multiplying and growing for millions of years. They are necessary for the life of man. When anything is deposited on the soil, like a leaf or a corn stalk or a dead bird or a dead man, these bacteria in the soil decompose. That material is converted into simple mineral substances, which are in turn taken up by the roots of plants, pass up the stalk of the plant or tree, and are synthesized or built up into food products

that man uses or animals that feed on plants, and
1755 man feeds on them.

So the soil bacteria are very necessary for our existence. Those bacteria are characterized by their ability to decompose starches and proteins. They are very active in a chemical sense. When those bacteria get into paper board and get into the milk from the board, they

do what they have been doing for several thousands of years, what their ancestors have been doing,—they start decomposing the milk. That is their function. Both the casein part or the protein is decomposed in the milk container, just like it is decomposed if you pour it on the ground where those bacteria are.

Also the sugars are decomposed.

The Master: Q. The sugars in the milk?

A. The sugars in the milk are decomposed if they come in contact with these bacteria. That is their function in nature, that is, to reduce complex substances to simple substances.

In the process of decomposition, particularly with casein or protein, there can be toxic products formed. That is the amins. Amins are split down protein material that are toxic for men. They cause irritation. They carry diarrhea, increased peristalsis of the intestinal tract. Those that break down or decompose the sugar form acids.

1756 Those bacteria are not disease producing, but they are harmful in that they decompose milk.

Then a second problem from a public health standpoint is that when we find a food or a food product or a food container that is high in bacterial content, assuming that they are harmless soil bacteria, we interpret that as unsanitary practice. In some way the soil is transported into the food. Then it is just one step to transport sewage into the food, or transport urine into the food, or saliva. So a high bacterial count, admitting that they are harmless bacteria, has considerable public health significance. It indicates unsanitary practices.

Now, as to the human type of bacteria, they are the most harmful ones.

Most of the activities of the Health Department are concerned with preventing the transfer of contagion from one person to another. The vast majority of our diseases are human diseases, transferred from human to human. So when we detect on a food container human types of bacteria, we immediately suspect that pathogenic or types that cause diseases may be associated with those human types.

1757 In the nose and throat of man we always have bacteria. Not all of them are disease producers, but we may have chronic carriers of diptheria, scarlet fever and other diseases, which can be conveyed by saliva or by con-

tamination of hands with saliva to a food or a food container.

When we find human bacteria, we are convinced there is a break in what we term sanitary technique, and it becomes a major public health problem.

Then continuing with the question as to the degree of absorbency of the container, that is an important factor, but the mere fact it is absorbent indicates a public health hazard. Whether it is absorbent on the bottom, through a rough die, or at the scoring line, due to breaking of the fibres, or at a seam, due to the double thickness in the free ends, whether one or all places are absorbent, the mere fact it is absorbent is of considerable public health concern.

The matter of offsetting is also of public health concern. As I mentioned before, it is quite true that one or two containers, with the ink on the inside of the offset, if the paraffin chips at that place and conveys the ink in the paraffin to the individual, that would not be very significant,
1758 but if that occurred frequently, daily or several times a day, it would be a major public health problem.

The Master: Q. What would be?

A. The presence—

Q. Of offsetting?

A. (Continuing.) —of the offsetting getting into the milk, containing heavy metals. If you look with a magnifying glass at the printing material on a container, it is in a ridge. It is an insoluble substance pressed down on the container, with a rapid oxidizing or drying agent that dries quickly. The offset is just the same thing. It is just a little ridge of insoluble dye containing heavy metal, and that chips off with the paraffin into the milk.

Q. Is there any bacteria in the ink?

A. Yes. It is a chemical poisoning and not a bacterial poisoning.

Q. You think one is just as bad as the other?

A. Yes, sir.

Mr. Schaefer: Q. Has the presence of offsets any effect on the efficiency of the application of paraffin, Doctor?

A. I doubt whether it plays much of a role in that. I am not sure, but I don't think so, sir.

Q. Have you an opinion, Doctor, as to the accuracy
1759 of the test described in this testimony as the rinse test as a means of determining the bacteriological condition of paper milk containers?

A. Yes, sir.

Q. What is that opinion?

A. I don't think the rinse test, as applied to a porous container, compares to the information you can get from a rinse test made upon a non-porous or impermeable container.

With the porous container, it depends upon the porosity, the degree of porosity. Then the rinse test does not give you the right picture, because the danger of the paper container for milk is that that milk is stored in the container. If it were used for a drinking cup, it would be a different problem, but we have milk storage here.

The Master: Q. You have what?

A. Milk storage, for a duration of hours, the milk is stored in the container.

Q. Yes.

A. For that reason the rinse test does not give you the degree of permeability of the container after storing milk for one, two, three, or four days, as might happen the home, in the ice box.

1760 Mr. Schaefer: Q. In actual operation?

A. Yes, sir.

Q. Have you an opinion, Doctor, as to the accuracy of the test that has been here referred to as the disintegration test, as a means of determining the bacteriological condition of paper milk containers?

A. Yes, sir. I have worked for about eight or ten years on various problems associated with the way cellulose fibres react to bacteria.

Now, a wood fibre is a cellulose tube. It is just a tube forming a wall with cellulose, and that is impregnated for stability purposes with what we call lignin. Lignin is a sort of resin product manufactured or formed by the tree that impregnates these cellulose tubes that make up the tree substance. These tubes are for the purpose of conveying the liquid from the root up to the leaves. The action of sunlight and temperature on the leaves produces a slightly negative pressure or slight suction, and that is sufficient, with the capillary attraction in these long slender tubes—there are billions of them running up the length of the tree—these tubes, by capillary attraction, bring water and sap up from the roots.

When we purify those cellulose tubes, we remove all of the lignin, or as much as we can, and just have the tube.

1761 That is what our pulp does. It is just purified cellulose tubes or fibres.

These are hollow tubes, and they have a tremendous attraction for bacteria.

I think it is the difference in the electrical charges between purified cellulose and bacteria that causes the attraction of bacteria on to the fibre, but with cellulose fibres, when bacteria touch them, they will stick, and they will stick a long time. Even by putting them in a mechanical shaking machine it is hard to release them from the fibres.

In my opinion, what happens with our disintegration test is that we are counting the number of colonies that develop from a disintegrated sample of paper. That part of the test is accurate, but the part that I think is in error is that we consider each one of those colonies to be one of the bacteria. I think that is wrong. Our whole system of sanitary water and milk analysis is based on that assumption. It is probably true here, because we have bacteria suspended in a liquid, like in urine or in water or in milk, but when we have cellulose fibres in there, then we have a hundred bacteria or a thousand collect on that fibre. When that fibre is put into growth promoting media, we have one colony. That one colony does not represent one bac-
1762 teria. It may represent an X number of bacteria, which is impossible to know.

So I doubt very much, in fact I am convinced that our disintegration test, interpreted in the same way as water counts, as milk counts, is wrong. I think we have many more bacteria in our sample than we are counting, assuming that only one bacteria forms a colony. There are many more bacteria in each colony.

What substantiates that past experience with cellulose fibre is that if you look under the low power of a microscope at an agar culture in a Petri dish, you will find that the vast majority of the colonies that develop are developed in relation to a fibre. The original inoculum was on the cellulose fibre. I think from my past experience with the cellulose and observing the disintegration counts, I don't believe they give you a true picture of the number of bacteria present.

Q. In your opinion, Doctor, is the fact that paraffin from paper containers gets into the milk put into those containers a matter of any public health significance?

A. Yes, I think it is.

Q. Why, Doctor?

A. I don't think it would be significant for an adult
1763 or a healthy growing child, but I do think it would be significant for a baby or a child suffering from diarrhea or a senile, older person suffering from diarrhea, or premature babies, even though they are healthy, because while paraffin is not irritating, it is just a foreign body, it is a foreign globular mass that is in the intestinal tract, and if the intestinal tract is reddened, inflammed, irritated, it is just an added irritation, in a mechanical sense.

Q. Is milk an essential part of the diet of infants, Doctor?

A. Yes, it is essential and necessary.

Q. Is it an essential part of the diet of injured persons and convalescents, normally?

A. Yes.

Q. Is it an important part of the diet of children?

A. Yes, it is.

Q. Have you an opinion as to the proportion of the total milk consumed in the city of Chicago which is consumed by children under the age of twelve?

A. Does that question refer to fresh fluid milk only?

Q. Yes, sir, fresh fluid milk only.

A. I would say more than half, considerably more
1764 than half. I would hesitate to give the exact percentage.

The Master: Q. May I ask a question there? With reference to the irritating effect of a bit of paraffin in the intestinal tract, all solid food causes irritation to the intestinal tract, doesn't it?

A. I don't think so. It is according to what you mean by solid food, Master.

Q. Let us put it as anything that leaves a residuum to be passed off through the intestines.

A. No. You take milk, for instance. The coagulum of milk is so broken up that it is just a gelatinous mass, just a weak mush in the intestinal tract, not in hard globules, not in solid masses. That is the reason we do not feed the infant on solid food until he is six or eight months of age. We do not give solid food to a six year old child who has diarrhea. We avoid anything that is of a solid mass in the intestinal tract, because it increases the expulsion force.

Q. Do you think there is enough paraffin in a pint of milk to cause any trouble at all?

A. I think anything that is foreign in the intestinal tract, a foreign mass, a physical foreign mass, is detrimen-

tal. The quantity will depend upon the extent of the detrimental part.

1765 Q. You are talking now about infants who are not taking in any food that leaves any fibrous material?

A. Yes.

Q. To cause irritation?

A. Yes, sir, and the premature infant.

Q. Do you think what might be characterized as an infinitesimally small amount of paraffin might cause any damage?

A. No, I don't think so, not such an amount as that, but the amount varies, I understand.

Q. Would you say there is very much in an ordinary drink of milk?

A. No. I would not say there is very much, according to what I have heard.

Q. How much milk would you say would have to be drunk before there might be enough paraffin taken in to cause some damage?

A. If there was a spicule of paraffin in an ounce of milk, it would be in that ounce. I mean, if the paraffin is in a solid form, then it might be in a spoonful, it might be in an ounce.

Q. I mean, how much paraffin would have to be free, say, in a pint of milk?

A. If it is chipped off, if it is a visible quantity, it will not be disseminated through the pint. It will be in

1766 one particular part of the pint.

The Master: Go ahead.

Mr. Schaefer: Q. What are the factors, Doctor, which influence the length of time which living bacteria will survive on paper board?

A. I think the factors are influenced by the manner in which the bacteria are placed on the paper board.

Under ordinary practice, bacteria placed on paper board, in the conversion process, or, at least, where it is manually handled, or where we have contact with humans, or excreta from humans, whether it is hands, droplets, respiratory sneezing and so forth—when we deposit bacteria on paper board that are embedded or enmeshed in saliva or in drops of mucous or in drops of pus from the upper respiratory tract, we are depositing human bacteria, and we are depositing food with the bacteria in the droplets, and it is of such a consistency that it prevents drying. It is a mucous,

pus or serous material and it prevents the desiccation or drying of the bacteria. That is the usual way in which bacteria are deposited. We not only deposit the bacteria, but we deposit the food with it and also the method of preventing desiccation, enmeshed in this tenacious material.

1767 Now, if we place bacteria suspended in water on the surface of cardboard—that is, an artificial experiment—those cellulose fibres or tubes making up the board have a water hunger and they will absorb water rapidly. That is their function, conducting the water by capillary attraction. The board very rapidly absorbs the water. The bacteria die by desiccation on the surface.

Now, if the experiment is so carried out that there are small pieces of board used, say inch square or two-inch square pieces of board used for this artificial inoculation or experiment, then we have a larger edge or raw surface in proportion to the calendered surface, than if we had a piece of board a foot square. It is at the margin, the ends, with loose fibres, where the ends are sticking out, where the rapid absorption takes place. As the board takes up the water, it has such a tremendous water pulling power, as compared with the bacteria, it just dehydrates the bacteria and they disappear very quickly from such a surface. They have no means of protection as they would have if they were inoculated in connection with contagious material, from feces, urine, nose, throat and other sources of human origin.

1768 Q. In your opinion, Doctor, does the use of paper caps for glass bottles present a public health problem which is comparable in significance to the use of paper containers for the distribution of milk?

A. No, I don't think the problem is the same in both at all.

Q. Why, Doctor?

A. I think the paper cap—well, the paper cap is paraffined at a high temperature of about 220 degrees fahrenheit. It is only in contact with the paraffin for a few seconds, not more than three or four or five seconds. The paraffin must be driven into the cap. If it is on the surface, then two caps will stick together as they are put in the tube and the capping machinery in the dairy would not operate, it could not operate if the caps stuck together. So they are what I call dried paraffin. That is, the paraffin is driven in.

Q. Dried paraffin?

A. Dried paraffin. Or, as I say, dried wax, as the commercial men call it. The making of caps is a mechanical operation. They are stamped out of rolls, paraffined in tubes, without being touched. There is little human contact, and there is tremendous rapidity and mass produc-
1769 tion by the machines.

Then, the cap does not come in contact with the milk in the same way that the container does. It is on top of the bottle, and in filling the bottle it can never be filled to the top. You cannot cap it if you fill it to the top.

So ordinarily, in ordinary practice, the milk does not exert pressure against the cap. It may touch the cap or it may slosh against the cap or under certain temperature conditions it may even come up to the cap and press against the cap, but under any condition we do not have the pressure against the cap that we have exerted in the paraffined paper board container that is in contact with the milk for several hours at a time.

Also, it comes in contact with the underneath surface of the cap, which is a smooth, calendered surface. It is not scored. It is not printed. It is very smooth. It would not be absorptive as some parts of the paper container.

Q. Have you an opinion, Doctor, from the point of view of protection of the public health, with respect to the relative hazard involved in the use of paper cups as containers for liquids, like coffee, Coca Cola and other soft
1770 drinks, as compared with the use of paper containers for the distribution of milk?

A. Yes, sir.

Q. What is that opinion, Doctor?

A. I don't think they compare from a public health standpoint.

Q. Why?

A. The use of liquid type containers—that is what they are; they are really liquid type containers—was started early by the health departments to replace the common drinking cup at drinking fountains. That was initiated before we had the constant flowing drinking fountains, and their use in the dispensing of beverages was an outgrowth from their use in replacing the common drinking cup.

The beverages placed in such paper containers only remain in the container a relatively short time. They are not storage containers. The material placed in those containers

does not present the health hazards of bacterial growth that milk presents. That is, they are not growth promoting media.

I think that probably the most important factor is that those containers are not used for food for young infants and young children and therefore present a different
1771 health condition entirely from a public health standpoint.

Q. From the point of view of protection of the public health, have you an opinion as to the relative hazard involved in the use of paper containers for the packaging of ice cream, butter, lard, cottage cheese and other kinds of cheese, oysters and pickles, as compared with the use of paper containers for the delivery of milk?

A. Yes.

Q. What is that opinion, Doctor?

A. I think of the food substances you named, ice cream is the most important one.

We control the ingredients and the sanitary conditions of ice cream by ordinance and the permit system in Chicago, and we insure that the ice cream is made of sanitary products. The ingredients are all under control.

After ice cream is frozen, in a hard state, it is relatively easy to prevent contamination. It is not a growth promoting medium at all. It is too cold.

Our effort is to prevent bacterial contamination where it is a growth promoting medium, that is, before it is frozen. After it is frozen, our method of control is
1772 very simple, because there are very few health hazards connected with ice cream in a frozen state.

Ice cream in a frozen state is solid. When placed in a paper container there is not any liquid bridge; there is not anything there that will convey the substance into the container. The health hazards are not comparable to those in fresh fluid milk, where the container is used for storage.

I think cottage cheese is the same thing. It is produced by the dealer, under permit, and it is a solid.

Now, as to other cheeses, most of the other cheeses that are put into paper containers are solid. They have been seeded with various types of yeast and moulds to produce the particular cheese, and we know that the leaven that they use to make the cheese and the growth of the leaven in the cheese destroys all pathogenic bacteria. It is a solid. It is usually acid in reaction and it presents little health problems on protection from contamination.

Q. What about butter, Doctor?

A. It is difficult to contaminate butter, because of the high fat content. It does not possess a sugar. It pos-
1773 sesses little protein and is very high in fats.

Butter is usually wrapped in oiled paper, ordinary parchment varieties of paper, impregnated with oil, and is put into containers of various types in an oil package, but it is mainly the high fat content, the absence of sugar and the minimum amount of protein that protects butter from outside contamination.

We control the quality of the milk that goes into the butter and we know, like in ice cream, that we have a sanitary product up to the time it is formed into a solid state.

Q. What about lard, Doctor?

A. Lard presents no sanitary hazards at all. It is hard to find bacteria that will grow in lard. It is devoid of protein, devoid of sugars, only containing fats, and the decomposition of lard in bacteria is almost a rarity. It is a curiosity.

Q. What about oysters, Doctor?

A. Probably the first single-service paper container produced was produced for oysters. It was produced in Baltimore between 1875 and 1880. It was a paper container, that we are all familiar with. There is practically the same one used now, where the ends are formed by sticking into a slot, and the paper comes flat, and it is built up into
1774 a container. That has been used for the longest period of time as a single-service container for food products.

The oysters are usually conveyed from the store or the place of purchase to the home in these containers, and are most frequently put into other containers, at any rate they are heated, cooked, before they are used, as the shucked oyster in the market is always used for cooking purposes, so we heat it anyway.

Now, as to pickles, they are in their own preservative. Probably one of the oldest forms of food preservatives. The development of acid in the form of vinegar has been used since 400 years before Christ, so we have there a vehicle that is self-sterilizing and self-preserving.

Q. Do you know the mortality rate, the infant mortality rate, that is, of infants under the age of one year, for the city of Chicago, for the year 1938

A. I looked that up and made a note of it. I can't remember it.

Q. Do you have the note with you, Doctor?
A. Yes.
Q. You may refer to that.
1775 A. In 1938 the infant death rate per thousand living births was 33.7.
Q. That is in the city of Chicago?
A. That is in the city of Chicago for 1938.
Q. And for 1937, what was that rate in the city of Chicago?
A. The infant death rate per thousand living births was 37.8.
Q. What was the infant death rate in the city of New York for the year 1938?
A. The infant death rate per thousand living births in New York City for 1938 was 38.3.
Q. And in New York for 1937?
A. It was 43.7.
Q. What was the infant death rate in Philadelphia for the year 1938?
A. 42.2.
Q. And for the year 1937?
A. 44.6.
Q. Do you have any opinion, Doctor, as to why cream does not rise to the top of the container when it is put into a paper milk container?
A. No, I don't think I do. The cream rising to the top is a very complex physical chemical problem. It does it all the time and we don't think much about it, but we still
1776 do not understand all the principles involved.
Q. Is Mr. George D. Scott a friend of yours, Doctor?
A. Yes, sir.
Q. Mr. Scott is connected with the Ex-Cell-O Corporation?
A. Yes, sir.
Q. Do you know what his capacity is there?
A. I do not know.
Q. Did you have any conversations with Mr. Scott with respect to the Pure-Pak paper container?
A. Yes, sir.
Q. When did you have those conversations?
A. I think it was the last week in October, in 1938.
Q. Where was that?
A. Mr. Scott phoned me from some place in Chicago to

my office at the University, said he wanted to see me about paper containers. I do not just recall the conversation, but I gathered from him that he wanted to see me about paper containers, that my name had been suggested to him on a recent visit to the Chicago Board of Health.

Q. And as a result of that conversation did you see Mr. Scott?

A. Yes, sir. He came out to the University and saw me in my office there.

Q. What was the substance of your conversation
1777 with him there?

A. As I recall, Mr. Scott was there for about two hours. He went over the history of how the Ex-Cell-O Corporation became interested in making and merchandising a dairy machine and emphasized that he or anyone connected with the Ex-Cell-O Corporation were experienced in dairy work or in public health work.

Q. Were experienced?

Mr. Gariepy: Were or were not?

The Witness: A. Were not. He emphasized that there was no one in the organization with that background and experience.

The Master: Q. Who emphasized that?

A. Mr. Scott.

Q. Yes.

A. And he came to me to get me to help him in presenting his material to the Chicago Board of Health. He had a suitcase full of material, probably fifty or sixty pamphlets, articles, some typewritten—

Mr. Schaefer: Q. Did he have that with him at your office?

A. He had that with him. He wanted this material summarized into a tangible, understandable report form.

Q. Was anything said at that meeting about com-
1778 pensation?

A. No, sir.

Q. Did you undertake at that meeting to do any work for Mr. Scott?

A. No, I did not. I told Mr. Scott if he wanted to leave his material with me I would go over it and see what it was all about, see what was in there that I could use, if anything, and for him to see me again or contact me again in about a week.

Q. Did he contact you again in about a week?

A. Yes, sir. About the first week in November.
Q. Where did you see him then?
A. I saw him at the Palmer House.
Q. What was the substance of your conversation then?
A. I told him that I thought that I could get some material out of what he had left me. A great deal of it was more of sales value than any value that I could use it for, but some of it was useful.

I also told him that I would have to have more personal contact, that I would like to see one of the machines, at least, see it in operation, and that I wanted to consult with Dr. Breed and Dr. Sanborn about paper, what progress they had made on the sanitary quality of paper, since
1779 I had seen their last bulletins.

The Master: Q. What was the purpose of your activity in this matter?
A. It was to correlate into a tangible, understandable report a group of isolated writings and reports that Mr. Scott had in his suitcase, that he gave to me at the time.
Q. Were you to state your opinion, too?
A. I told him I would state my opinion if I had one to offer, but I would have to see the machines and make some personal observations before I could state my own opinion.

Mr. Schaefer: Q. You understood, didn't you, Doctor, when he was consulting you that he was interested in securing permission to sell that type of container in the city of Chicago?
A. Yes.
Q. And that it was for that purpose that he consulted you?
A. Yes, sir.
Q. At that time were you a member of the Board of Health of the City of Chicago?
A. No, sir.
Q. Now, have you completed your statement as to the substance of the conversation at the Palmer House
1780 between yourself and Mr. Scott.

A. Well, the conversation, as I mentioned, went to that point. I suggested to him that the report made should be considered as a preliminary report, and that undoubtedly there would be other problems come up in relation to the container, and suggested, just as a tentative outline, that we consider about four months the duration of our contact and I told him a reasonable sum would be a

thousand dollars for the four months' service, which he said was agreeable.

Q. When did you next see Mr. Scott?

A. I next saw Mr. Scott in Geneva, New York, in Dr. Breed's and Dr. Sanborn's laboratory.

Q. What did you do there with him?

A. That was about the middle of November.

Q. Of what year?

A. 1938. I arrived at Geneva—

Q. Are you sure of the year, Doctor?

A. 1937. I beg your pardon. This was all 1937 and not 1938. When I first saw Mr. Scott it was the last week in October, 1937. If I said 1938, I was in error.

Q. What did you do there with him, I asked you?

A. I arrived in Geneva in the morning and Mr. Scott came in about noon. I spent the morning, as well as the afternoon, with Dr. Breed and Dr. Sanborn. I have
1781 known Dr. Breed for twenty years and have known Dr. Sanborn for two or three years.

I went over the results that they had obtained since the publication of their last bulletins and noted the improvement in the sanitary quality of paper board, as they were finding it in their analysis, that was sent to them from various sources. There was a constant improvement since their last report in the sanitary quality of paper board. I was particularly interested in the Cherry River mill board. The last report they had was about two months old or three months old. I suggested that they get a very recent report to see whether it was holding up the same or different. Dr. Sanborn and Mr. Scott left Geneva that night and went to Cherry River and completed the sanitary survey of the mill and the paper board.

Q. What did you do?

A. I came on back to Chicago.

Q. Did you see Mr. Scott again?

A. I saw Mr. Scott in Detroit about a week after that. I went to Detroit for two purposes. One was to see the Pure-Pak machine in operation in a dairy in Detroit. The second thing was to talk to Dr. Vaughn, the health officer of Detroit, whom I have known for a number of years,
1782 relative to paper containers for milk, and his experience with them in Detroit.

I saw the Pure-Pak machine in operation, watched it all one morning. I spent the afternoon with the health department.

Q. Then what did you do, Doctor?

A. I came back to Chicago again. From that material that Mr. Scott had left with me and my observations at Geneva and Detroit, I wrote my report.

Q. And that report is the document which is Plaintiff's Exhibit 4 in this case?

A. Yes, sir.

Q. And what did you do with the report after you had written it, Doctor?

A. After I wrote the report I asked Mr. Scott whether he wanted me to submit it to the Health Department or whether he wanted to do it. He asked me to. I took it down to Mr. Krueger at the Chicago Board of Health.

Q. Thereafter, did you discuss that report with Dr. Bundesen, the president of the Board of Health?

A. Yes, sir.

Q. Where was that?

A. In his office, in the Chicago Board of Health.

Q. What was the substance of the conversation there?

1783 A. Dr. Bundesen was most concerned about the sanitary qualities of the paper board.

Mr. Gariepy: That is not responsive to the question. He asked for the conversation, Master. That is his conclusion.

Mr. Schaefer: Q. What did Dr. Bundesen say, in substance, and what did you say, Doctor?

A. Dr. Bundesen asked me if the paper board was sterile. I told him no, it was not sterile, but that I thought it could be made sterile, that it was not sterile at this time.

The next thing he asked me was what were the advantages of the paper container, that is, a single-service container for milk.

I told him I thought it had many advantages, like the advantages in a quarantined home. It was certainly a public health service there, to prevent any possibility of dissemination of contagion. It was of advantage in hospitals, and particularly in the Contagious Disease Hospital, where we had one floor filled with scarlet fever patients and one floor of measles and one floor diphtheria, where, regardless of the best of care we sometimes get cross infection. If we had single-service containers we most probably could eliminate at least the drinking

1784 glass for milk as one of the sources. Also its use in

the General Hospital, where we have to boil every glass, would be an advantage. Those were some of the advantages I pointed out to him.

Q. Doctor, were those the advantages to which you referred when you said in Plaintiff's Exhibit 4: "From my personal investigations and observations I see many advantages to the single-service paraffin-coated milk container for fresh fluid milk."?

A. Yes. That was the paragraph that Dr. Bundesen asked me to explain.

Q. How much time did you spend in connection with the preparation and presentation of this report?

A. With those two, one trip to Geneva and one to Detroit, I would say not more than five or six days, not more than that.

Q. And for your services, how much were you paid by the Ex-Cell-O Company?

A. Two hundred and fifty dollars, and my expenses on these two trips.

Q. Did you ever state in a telephone conversation, or otherwise, to Mr. Scott that you had never taken such a lashing from anybody in your life as you had taken from Dr. Bundesen, because you proceeded with the gath-
1785 ering of this data on behalf of Pure-Pak, without first consulting Dr. Bundesen personally?

A. No, I don't remember saying that.

Q. Now, Doctor, at the time when you prepared Plaintiff's Exhibit 4, what had been your experience with the bacteriology and the sanitation of paper?

A. I had had about nine years experience with the Kimberly-Clark Corporation.

Q. What type of products does the Kimberly-Clark Corporation manufacture?

A. They manufacture a variety of paper products. I was associated with all of their products, but primarily with one product, which is their disposable tissue division, which makes Kleenex, a disposable tissue and also makes a disposable sanitary napkin called Kotex, and similar products of disposable tissue. I have been a consultant of Kimberly-Clark since 1928.

Q. Now, in addition to your experience as a consultant to Kimberly-Clark, what experience had you had with paper at the time you prepared Plaintiff's Exhibit 4?

A. I had had none, except with Kimberly-Clark.

Q. After the presentation of Plaintiff's Exhibit 4,

did you have any experience with the manufacture of paper board for use in paper milk containers?

1786 A. Yes, sir.

Q. Will you describe what that experience was?

A. From June, 1938, up to December, 1938, I was a consultant to the Sealright Company, Fulton, New York, who make paper containers for food and for milk.

Q. Did Sealright pay you for that work?

A. Yes.

Q. Specifically, what did you do as a consultant for the Sealrite Company?

A. The first thing I did was to have them built and equip a bacteriological laboratory.

Q. Where, Doctor?

A. In Fulton, at their plant.

Q. Fulton, New York?

A. Fulton, New York, yes sir. They built and equipped a bacteriological laboratory, employed two bacteriologists to man it, and we began a thorough sanitary survey of everything, from the log pile to the finished container, to determine what kind of a sanitary program we should inaugurate, where our hazards were and what they were. That was my primary purpose.

Q. And how long did you remain there?

A. I remained there until I became a member of the Board of Health. I resigned when I was appointed

1787 to the Board of Health.

Q. Can you tell me some of the things which you did in connection with your work for the Sealrite Corporation, with respect to their sanitary program?

A. Well, I supervised all of the laboratory work and also inaugurated an educational system or personal hygiene in the mill and conversion personnel.

Q. At the time when you said in your report, which is Plaintiff's Exhibit 4, "Cardboard of a satisfactory sanitary quality can be obtained and used for this purpose," meaning the manufacture of single-service containers for milk, upon what experience was that opinion based?

A. When I was talking to Dr. Breed and Dr. Sanborn in Geneva, I noted that some of their disintegration counts of board showed no bacterial growth. That substantiated what I had in mind, and that was producing a sterile board. That idea or that conception was based upon my experience with Kimberly-Clark.

At Kimberly-Clark, we succeeded in producing sterile

disposable tissue. Thousands of samples of Kleenex, a variety of sheets, have been taken over a number of years, and it is always sterile when it comes off the dryer.

1788 I thought it was possible to do the same thing with cardboard, because we accomplished that at Kimberly-Clark by slowing down the sheet going through the dryer or increasing the dryer capacity. We dessicated the sheet. When the sheet comes off, at the Kimberly-Clark Corporation, it contains less than one-half of one per cent water, and it is sterile.

I though I could do the same thing with paper board, by proceeding along the same general principles, but when I got into the paper board mill I found that I could not do that.

You cannot do it for the reason that the paper board that has less than five per cent water is difficult to convert, that if you score it you crack it, it is so brittle. It requires five per cent water, approximately, to give it the resiliency or give it the bending power necessary for conversion without breaking it, like you would break a stick.

Of course, the same problem comes up in connection with the thin tissues. They cannot be converted when they are taken off the drier with so low a moisture content, but you only have to put them in an air-conditioned room for two or three hours and the thin tissue takes

1789 up moisture to any degree you want to take it up.

But a paper board requires months to attain that degree of moisture content, particularly tight rolls, if you have rolls. So I found the experience I had at Kimberly-Clark I could not transfer to the paper board mill at all.

Q. While you were working at the Sealrite Corporation, did your experience cause you to change your opinion with respect to the possibility of producing a paraffined paper container for milk which was satisfactory from a public health point of view?

A. Yes.

Q. Did you ever express that opinion to anyone?

A. Yes.

Q. To whom?

A. I have expressed to several people, including Mr. Skinner.

Q. Who is Mr. Skinner?

A. The president of the Sealrite Corporation. E. W.

Skinner, the president of the Sealrite Company, Fulton, New York.

Q. Did you ever express that opinion to Mr. Skinner in writing?

A. I think I did, yes, sir. I am sure I did, but most of our—

Mr. Garicpy: I object. He has answered the question. He said he did in writing. That is responsive.

Mr. Schaefer: Q. Did you also express that opin-
1790 ion orally?

A. Yes, repeatedly orally, with quite long discussions.

Q. With anyone other than Mr. Skinner?

A. Yes, sir.

Q. Who were some of the other people to whom you expressed that opinion?

The Master: What opinion is this?

Mr. Schaefer: This is the opinion that a paraffined paper container for milk or for fresh fluid milk cannot be made so it is satisfactory from a public health point of view.

The Witness: A. Yes. With the vice-president, Mr. Dolphin.

The Master: Q. Vice-president of what concern?

A. Of the Sealrite Company. The chief chemist of the Sealrite Company, Robert Huntley. The chief engineer, Mr. Price.

Q. Was that before you became a member of the Board of Health?

A. Yes, six months before.

Mr. Schaefer: Q. And was that at the time when you were being paid by Sealrite Corporation as a consultant?

A. Yes, sir.

Q. How much were they paying you, Doctor?

A. Five hundred dollars a month.

1791 Mr. Schaefer: Cross-examine.

Mr. Gariepy: If the Master please, we have been exactly three hours on direct examination, and it is going to take a considerable time to cross-examine. May I suggest that we adjourn until Friday? It is impossible for me to go ahead today and do justice to the cross-examination on behalf of my client. I believe this is the first time we have asked for any delay in the examination of any witness.

The Master: Have you any objection to that, Mr. Schaefer?

Mr. Schaefer: Well, I am very anxious to proceed. We are sitting here for three days. I want to conclude the case as soon as possible.

The Master: Is this your last witness?

Mr. Schaefer: I think so, yes, sir.

Mr. Gariepy: If counsel is objecting, I suggest he put on his other witness and proceed, and I might be able to cross-examine him this afternoon, if he wants to go ahead, but I want to reserve my cross-examination of this Doctor until Friday.

The Master: Do you have some other things you want to put in, Mr. Schaefer?

Mr. Schaefer: I have some other things that I want to take up with you, yes, sir. As to other witnesses,
1792 I think not. It depends on the cross-examination of Dr. Arnold.

The Master: Well, as I recall it, you made a similar request before.

Mr. Schaefer: That is right, yes, sir.

The Master: In regard to some other witness they put on.

Mr. Schaefer: I recall a long speech too, at the time, unless my recollection fails me, a rather vehement protest.

The Master: Well, of course, the decison was made at that time and I suppose the same decision will apply to this. Suppose we give them until Friday morning at 9:30.

Mr. Schaefer: All right, sir.

Whereupon the further hearing of the above entitled cause was adjourned to 9:30 o'clock a. m. of the following day, Friday, October 13, 1939.

1793 • • (Caption—) • •

Friday, October 13, 1939,
9:30 o'clock a. m.

Met, pursuant to adjournment.
Present:

Mr. Gariepy, Mr. Rall, Mr. Schaefer, Mr. Horan.

1794 The Master: You may proceed with your cross-examination, Mr. Gariepy.

LLOYD ARNOLD a witness called by the defendants, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Gariepy.

Q. Dr. Arnold, you have attended all of the hearings we have held before Master Grossman, since the filing of this suit on February 2nd, have you not?

A. I believe I have.

Q. Did you attend with Mr. Schaefer the taking of the depositions in April, 1939, at Philadelphia and New York City?

A. Yes, sir.

Q. Why did you attend said hearings here and the depositions in the two places?

A. I considered myself a defendant in the case and I was interested in it and I was concerned about it.

Q. Were there any other members of the Board of Health in attendance at the hearing before the Master and the Commissioner on the taking of depositions, up to date?

A. Not that I know of.

1795 Q. Did I understand you to say that you now receive $500 a month salary in the dairy division or as consultant to the Board of Health, which is it?

A. I don't know exactly how it would be defined. I started out as consultant—as the responsible head of the dairy division, at the time Mr. Krueger and Mr. Guerin took their leaves of absence. Then when I returned I was asked to continue in relation to the modification and reorganization of the new proposed milk ordinance.

Q. And are you still received $500 a month at this time?

A. Yes, sir.

Q. And that covers, of course, services attending in the hearings here and services on the depositions?

A. I presume so.

The Master: Q. What is your salary as a member of the Board of Health?

A. Nothing, sir.

Mr. Gariepy: Q. Were your expenses in taking the depositions or at the time you attended the taking of the depositions paid by the Board of Health or were they paid by you out of your salary?

A. No, they were paid by the Board of Health.

Q. You said on direct that you did considerable 1796 research work, Doctor.

A. Yes.

Q. Have you done and do you now do research work for Proctor & Gamble Company?

A. No, sir.

Q. Do you do research for the Brassert Company on Michigan Avenue?

A. No, sir.

Q. Have you ever done any research work for them?

A. For Brassert?

Q. Yes.

A. No.

Q. Have you done it for Proctor & Gamble?

A. Yes.

Q. Did you do it through the Brassert Company's office on Michigan Avenue?

A. No. The contact was made through the office, but I did not have—

Q. Through Brassert's office?

A. Yes.

Q. And who in Brassert's office?

A. Mr. Woit.

Q. That was in connection with some soap, was it not?

A. Yes, sir.

Q. That is in the Straus Building?

A. Yes.

Q. What was your return, in the way of financial return, from the work you did for Proctor & Gamble, and when was it?

Mr. Schaefer: That is objected to.

1797 The Master: Objection sustained.

Mr. Gariepy: Q. Are you doing any work for them now?

A. No, sir.

Q. Did you do some research work or outside work, as you call it, for the Associated Milk Dealers, Inc.?

A. Yes.

Q. When?

A. I think that began in December, 1937, or January, 1938, and lasted about a year, or maybe 15 months.

Q. Who financed that research work?

A. The Associated Milk Dealers of Chicago.

Q. Was that a grant to the University of Illinois?

A. To the University, yes.

Q. Is that a similar type of a grant or a deposit of funds as is made at Cornell University that you heard testified to by Dr. Sanborn here?

A. I presume it is, yes.

Q. How much of this 20 per cent time that you say is allowed to you by your contract with the University have you expended in attending the hearings here in this case?

Mr. Schaefer: That is objected to.

The Master: I will let him answer.

1798 The Witness: A. I could not say. I have not kept any track of it.

Mr. Gariepy: Q. You say you have a contract with the University for 80 per cent of your time to the University and 20 per cent outside?

A. Yes.

Q. Is that in the form of a written contract?

A. Yes.

Q. Did you receive notification from Dean Davis—he is your dean, isn't he?

A. Yes.

Q. (Continuing) —on December 2, 1938, concerning the devoting of time to the University work and calling your attention to your time on the outside of 20 per cent?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Did you ever have any communication with Dean Davis with regard to your using time that you were supposed to use at the University, for outside work?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Have you been assigned by the Board

of Health of the City of Chicago to assist Mr. Schaefer in the defense of this lawsuit?

1799 A. I think I have. That is my understanding.

Q. By whom were you assigned?

A. By the president of the Board of Health and by the Board, too, I think. That was my understanding.

Q. Was there a formal resolution passed or letter given to you?

A. I do not recall anything formal about it.

Q. Has anyone been assigned by the Board of Health to assist you in the defense of this lawsuit?

A. Not that I know of.

Q. What have you done to assist counsel for the defense here, besides attending the hearings in this cause?

Mr. Schaefer: That is objected to.

The Master: I think he may answer.

The Witness: A. Why, I have consulted with him whenever it was necessary or whenever I was requested to.

Mr. Gariepy: Q. That was frequently during the hearings and in recesses?

A. Yes, sir.

Q. Is it not a fact that you prepared a list of questions that were asked you yesterday?

A. No.

Q. Did you aid in the preparation of that list?

A. No.

1800 Q. Did you prepare a list of questions that were asked witnesses for the plaintiff on cross-examination?

A. I consulted with Mr. Schaefer in their preparation.

Q. How many various commercial concerns are you doing research work for at this time, drawing on this 20 per cent schedule that you have?

Mr. Schaefer: That is objected to.

The Master: Oh, I will let him answer.

The Witness: One.

Mr. Gariepy: Q. Who is that?

A. Kimberly-Clark.

Q. Are you doing any work for the Sealrite Company at this time?

A. No, sir.

Q. Do you work for the United Fruit Company?

A. No, sir.

Q. Have you done work for them, research work?

A. Yes.

Q. How about the Laundry Institute, near Joliet? Do you do research work for them?

A. No, [redacted].

Q. Have you done it?

A. Yes, sir.

Q. Are you connected with the State Department of Health, the Chicago branch, at this time?

A. No, sir.

Q. I understood you yesterday to say that you were
1801 appointed on the Advisory Board for the State Department of Health concerning the rules and regulations for public health, is that right?

A. No, sir. That is a committee.

Q. On that committee?

A. That each director appoints to revise and bring the rules up to date.

Q. Does this compensation that you receive for research work go through the University or is it paid direct to you?

A. Paid direct to me.

Q. What is your salary, as bacteriologist and professor of public health at the University of Illinois?

A. I think it is $5,280, something in that neighborhood.

Q. Is it not $5,140?

A. That may be it.

Q. And how much work have you done or how much money do you receive or have you received during the past year for research work you have done on the outside?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. What date did you take over responsibility for the dairy division of the Board of Health of the city?

A. In December, sometime. I don't remember the date.

The Master: Q. What year?

A. 1938.

1802 Mr. Gariepy: Q. Are Dr. White, Mr. Martinek and Mr. Rudig working under your direction in the Board of Health in regard to the single-service container?

A. No, sir.

Q. Under whose direction are they working, if you know?

A. I think they are working under Dr. White's direction.

Q. Do you know at whose suggestion the various tests

or experiments performed by Mr. Martinek and Mr. Rudig were made in 1939?

A. I don't know specifically at whose suggestion it was done.

Q. Did I understand you correctly on direct examination to say that you spent each afternoon with the dairy inspectors?

A. No. In the Board of Health, when I was in charge of or responsible for the dairy division, I was there every afternoon.

Q. Are you still responsible for it?

A. No, sir.

Q. Do the inspectors report to you now every day?

A. No, sir.

Q. Or every other day?

A. No, sir.

Q. They do not?

A. No, sir.

1803 Q. What revisions of the proposed Mayor Kelly milk ordinance and various parts of it are proposed to conform to the United States Public Health Service?

Mr. Schaefer: That is objected to.

The Master: I will sustain the objection.

Mr. Gariepy: Q. You said that there were going to be proposals affecting the Mayor Kelly milk ordinance, is that right, on direct examination?

A. There were going to be proposals?

Q. Proposals for the revision of the Mayor Kelly milk ordinance.

A. I am working on various forms of revision. It is purely in tentative form. There are two or three different forms for each paragraph, or something of that nature. It is just tentative.

Q. What revisions are in contemplation?

Mr. Schaefer: That is objected to.

The Master: What is the materiality of that?

Mr. Gariepy: Q. By you. What revisons do you contemplate making in the Mayor Kelly milk ordinance?

Mr. Schaefer: That is objected to.

The Witness: A. I don't know at the present time.

The Master: He doesn't know at the present time.

Mr. Schaefer: Sir?

1804 The Master: He doesn't know at the present time, he said.

Mr. Gariepy: Q. In what respect does the Mayor Kelly

milk ordinance now not conform to the United States Public Health Service standards or suggestions?

Mr. Schaefer: That is objected to.

The Master: I will let him answer.

Mr. Schaefer: It doesn't make any difference whether they conform or don't conform.

Mr. Gariepy: You opened the door on it, Mr. Schaefer.

The Master: I will let him answer,

The Witness: A. That is a great deal. To answer that one would have to take the ordinance page by page, in order to answer that question.

Mr. Gariepy: Q. You cannot answer it?

A. No, I cannot answer the question,

Q. When were these contemplated revisions decided upon?

The Master: He has answered that he doesn't know what the revisions are going to be.

Mr. Gariepy: Q. When did you start on these proposed revisions, then? You said you started on tentative proposed revisions.

1805 A. I started on them last December.

Q. 1938?

A. Yes, sir.

Q. You said that more than 50 per cent of fresh fluid milk was taken or drunk by children under 12 years of age. What per cent is consumed by children under 1 year of age?

A. That I don't believe I could answer.

Q. Your figures on comparative death rates were for children one year old, weren't they?

A. They were children who had not reached their first birthday.

Q. Do you have any slightest reason, inference or suspicion to believe that any part of the Philadelphia or New York death rate was due to the sale of milk in single-service containers in said cities?

A. I have no evidence.

Q. Why did you quote those figures on direct examination concerning the death rates in those two cities then, Doctor?

Mr. Schaefer: It is obvious; the question was asked.

The Master: Objection sustained.

Mr. Gariepy: Q. What relation has those figures, Doctor, to the matter of the milk control or the sale of milk in single-service containers, if any?

Mr. Schaefer: That is objected to.

1806 The Master: Objection sustained.

Mr. Gariepy: Q. Do you consider that these figures with regard to the death rates have any relationship to the sale of milk in those cities, in single-service containers, as compared with the sale of milk in the city of Chicago in glass containers?

A. I don't know.

Q. Is not evaporated milk used in the feeding of babies in at least 50 per cent of the cases?

A. I could not answer that.

Q. Is not the fluid milk used in the care of babies sterilized before being used?

A. It depends upon the formula the mother is using. It is sometimes boiled and sometimes not.

Q. What is the customary thing in the feeding of babies, Doctor, under one year of age?

A. It depends upon the pediatrician. Some of them do boil it and some do not.

Q. What is your experience and knowledge with regard to what per cent boil the milk before they give it to the baby and what per cent give it to them cold and raw?

A. They warm it up. I don't know whether they all boil it or not. I am not familiar with that.

1807 Q. You are not a pediatrician then, Doctor, are you?

A. No, sir.

Q. Do you know the death rate for the years 1937 and 1938 for the city of San Francisco?

A. No, sir.

Q. The city of Los Angeles?

A. No.

Q. Do you know whether or not the city of San Francisco permitted the use of single-service containers during the past year, 1938?

A. I do not know.

Q. I ask you the same question with regard to the city of Los Angeles.

A. I do not know, no, sir.

Q. Do you have any figures or statistics from the Bureau of Vital Statistics of any city with regard to a showing that the death rate in cities using the single-service containers is brought about by reason of its use?

A. I know of no such information available.

Q. Can you recite one instance, Doctor, of an infant's death or an increase in deaths attributable to the use of milk or the sale of milk in single-service containers?

A. I have no such published reports.

Q. The single-service container has been in use
1808 in some cities for at least ten years, has it not?

A. I don't know. I could not answer that question.

Q. How long do you know the single-service container has been used, for instance, in New York City?

A. I don't know when they began?

Q. Do you know in Philadelphia?

A. No, sir.

Q. Do you know how many cities are using the single-service container at this time?

A. No, I do not.

Q. Do you know of a single instance, of your own knowledge, or from your contact with public health officials, or from reading medical journals and publications on public health, of any kind, of any instance, where disease or death or cholera or epidemic was attributable or suspected to be caused by the use of single-service containers?

A. No, I do not.

Q. You do know that there were instances of the communication of disease suspected to arise from the handling and reuse of glass milk bottles, don't you?

A. It has been suspected, yes.

Q. In your professional career, have you ever seen glass milk bottles used for the containing of foreign
1809 substances, such as turpentine, varnish or human excreta, such as urine and feces?

A. Yes.

Q. Do you consider the bacteriological control of glass milk bottles perfect?

A. No.

Q. You try to prevent glass milk bottles being returned from quarantined residences because of a recognition that the bottling and washing techniques do not always result in sterility, do you not?

A. No, sir.

Q. What do you do?

A. We do not allow the bottles to be returned until the quarantine has been discontinued.

Q. For what reason?

A. Then those bottles are all handled separately. Our main reason for that is that we do not want a bottle that may have disease producing germs on it handled by people who are going to handle other bottles. It is not the difficulty of cleaning the bottle. It is the difficulty of cross contamination before the bottle is cleaned.

Q. Then the glass milk bottle is a source of contamination, is it not?

A. Anything is a source of contamination.

Q. Is this one of the reasons that you enumerated or mentioned yesterday, as advantages in the use of
1810 single-service containers, that were mentioned by you in your conference with Dr. Bundesen on or about December 4, 1937?

A. Yes, sir.

Q. Then in that respect the single-service container promotes public health and protects it, doesn't it?

A. Yes, sir.

Q. Where the glass bottle does not do so?

A. It certain does, yes.

The Master: Q. Is that the public health of the consumers of milk or is it the public health of the washers of the bottles or other handlers of the bottles before they are washed; which do you mean, or do you mean both?

A. What I mean, Master, is that it will assist us in restricting the distribution of the causitive agents of the communicable diseases which we quarantine. If we can use single-service containers, it will help us to localize the contagious material and will prevent the possibility of spread.

Q. Spread to whom?

A. To other people, the population.

Q. That is, the users of milk in bottles?

A. The users of milk in bottles. It will prevent contamination of the milk supply and will prevent the
1811 drivers from contaminating door knobs as they go in and out. If they pick up a bottle from a quarantined premises and take a hold of the door handle next door, they might contaminate it.

Q. Or they might contaminate the bottle that they are going to put on the door step next door?

A. Yes, sir.

Mr. Gariepy: Q. And this reuse and constant passage of this bottle is what you call this cross contamination, is it?

A. The dirty bottle, yes, the ones that have not been cleaned.

The Master: Q. I want to get this straight now.

A. Yes, sir.

Q. Do you include in your contamination possibilities, the use of that identical bottle after it has been washed?

A. No, sir.

Q. In other words, if a bottle has been used on quarantined premises and is taken in by a milk driver and then washed in the ordinary course or ordinary routine, do you think that that bottle has any disease spreading possibilities?

A. No, sir.

1812 Q. Do you confine your disease spreading possibilities to the driver, then?

A. No. To the bottle before it is washed. The danger is between the quarantined premises and the washing machine.

Q. And everybody that handles it up to that time?

A. Yes, sir.

Mr. Gariepy: Q. You give these bottles from quarantined places a special treatment, do you not?

A. Yes, sir.

Q. And why do you give them special treatment?

A. Because we want to be doubly cautious.

Q. Then ordinary treatment is not sufficient caution?

A. It is sufficient caution, but we want a double caution when we know we are dealing with contaminated material.

Q. What importance, in determining the public health hazard or public health advantage of the paper bottle, have you given to the fact that it is used only once and then destroyed?

A. I didn't understand that.

Mr. Gariepy: Read it.

(Mr. Gariepy's question was read by the reporter as above recorded.)

1813 Mr. Gariepy: Q. Is that of public health significance?

A. Yes.

Q. Does not this advantage of the single-service container outweigh, from the standpoint of possible public health hazard, assuming, of course, the use of disintegration tests on the paper board from time to time by the best technique that you know, the bare possibility that in some instances the disintegration tests might not be entirely accurate?

Mr. Schaefer: Will you read that, Mr. Reporter? I didn't get it.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. No, I don't think so.

Mr. Gariepy: Q. Is it not more likely that the glass milk bottles which are used many, many times, are more likely to be subject to contamination by human bacteria, which you described as the dangerous type, than the single-service container?

A. I don't think so, sir.

Q. Do you know that numerous cities and municipalities have provisions and restrictions in their ordinances with regard to the type of containers of milk being used or sent to homes where contagious disease exists?

1814 A. Yes.

Q. And for what purpose do you think that is in there?

A. For the purpose of restricting the distribution of the causative agent of the disease. The single-service container is of advantage there.

Q. In determining the relative health hazard in the use of the glass bottle as compared with the single-service container of the Pure-Pak type, what weight have you given to the fact that the containers are exposed to contamination during the filling operation, referring to the paper container, for only a fraction of the time that the glass bottle is exposed to the filling operation?

A. I don't see where the health hazard of a filling operation comes in.

Q. Is not the exposure of the container to bacteria in the air a period of time an element to be considered concerning the sanitary assets of each container?

A. Yes, but the filling time is short.

Q. And isn't there bacteria in the air all during that time?

A. There are some bacteria in the air all the time, yes.

1815 Q. And that bacteria may settle upon the container?

A. It is possible.

Q. On the bottle?

A. It is possible, yes.

Q. And how much time, do you know, is the Pure-Pak container exposed to the air or contamination from the air during the filling process, how many seconds?

A. I do not know.

Q. How about the glass bottle; how much time is it exposed to contamination from the air?

A. That depends upon the speed of the filling machine.

Q. What is the usual, customary speed of a filling machine, Doctor?

A. From 90 a minute to 140 a minute.

Q. Is it not a fact that the glass bottles opened in the room are exposed for a much longer period of time after their last process of sterilization until they are filled, sterilized and capped again, than is the Pure-Pak milk bottle?

A. I don't know.

Q. That is a health hazard, is it not?

A. No, I don't think so. I would not call it that?

Q. Is it not a health problem?

A. With due care it can be controlled.

Q. Is it not a health problem, I am asking you?

1816 A. No.

Q. Is it not a fact that during the Pure-Pak operation on the Ex-Cell-O machine the paper container is almost continually enclosed in a covered machine, so it is not exposed to human contamination for more than a fraction of the time that a glass milk bottle is exposed in the typical glass bottle operation, in filling?

A. I think so, yes.

Q. Why is not the power to test cartons after they come to the dairy as adequate a method of bacteriological control as is testing 1400 glass milk bottles out of hundreds of millions used yearly in the city of Chicago?

A. I don't get that question.

Mr. Gariepy: Read it, Mr. Reporter.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. No. I do not think a glass milk bottle—well, the rinse test we carry out is only part of our general inspection system. We do not rely upon that entirely. The milk is under our control from the cow to the consumer and the glass bottle is just the consumer's package. On the disintegration tests, I don't believe we could get the information from that, because we
1817 would not know the source of the paper, we would not know whether it came from the same place or different places or anything about it.

Q. You have the same inspection of the dairies and the cows and the equipment in the paper bottle factory or paper bottle dairy that dispenses milk in paper bottles that you have in one that dispenses it in glass, don't you?

A. From the dairy standpoint, but not from the container.

Q. You check the cows and the cleanliness of the stalls and everything else?

A. Yes.

Q. Just as Mr. Woodman from Evanston said?

A. Yes.

Q. There are not any different methods that were employed, is there?

A. No, not in the dairy part.

Q. Has the Board of Health of the city of Chicago made comparable bacteria counts on milk in glass containers and milk in paper containers from the same dairies?

A. I don't think so, no.

Q. Is not the object of milk sanitary regulations to deliver uncontaminated and as nearly as possible bacteria-free milk to the ultimate consumer as is reasonably possible, considering the necessities of the practical op-
1818 eration and of the practical milk sanitary regulations?

A. I think so.

Q. In other words, the proof of the pudding is in the eating?

A. No, I wouldn't say that.

Q. But you did not make any comparative tests on this milk, then, in the glass containers, as compared with the milk in the paper containers at the same dairies, did you?

A. No. I don't know a dairy that has the two operations in it.

Q. Do you know the Bowman Dairy?
A. Yes.
Q. Do you know the Borden Dairy?
A. Yes.
Q. Do you know that they are selling milk in glass containers as well as in paper containers?
A. I didn't know it was at the same plant. I didn't know the same vat of milk would empty into two lines, one going into the paper filling machine and one into the glass filling machine, and that is the only way you can compare the two, is to fill them from the same vat.
Q. The dairy, then, would have a substantially different quality of milk in one vat from the other, so you could not make a comparable test, is that it?
1819 A. You could not make a comparable test.
Q. Or reliable test?
A. Reliable for that vat, yes, but not comparable to another vat of milk.
Q. Do you have any authorities or statistics that the bacteria count in milk in paper containers is higher than the bacteria count in milk sold in glass containers?
A. No, I don't think so.
Q. Did you ever advise the Board of Health to make those comparable tests on milk in the two containers at the same dairy?
A. I don't think so.
Q. You would remember whether you ever gave them such advice or suggestion, wouldn't you?
A. I think so, yes.
Q. Mr. Martinek testified here that the paper containers which he received were first sent to the bacteriologist and emptied of milk. What, if anything, did you instruct the bacteriologist to do with the milk?
A. Nothing that I know of.
Q. Why should the filled paper container have gone to the bacteriologist to be emptied, if only tests were to be made on the paper board?
1820 A. I do not know.
Q. Your disapproval, as you expressed it yesterday on direct examination, of the paper milk container at this time is based entirely on your statement that essentially sterile milk container board cannot be manufactured, is that correct?
A. No, that is not the total answer.

Q. Well, can it be manufactured?

A. I don't think so, consistently.

Q. And the reason you say that it cannot be manufactured, that is, sterile board for paper containers cannot be manufactured consistently, is that it must contain five per cent of water in order to take the scoring, is that it?

A. No, that is not exactly it. At least, that was not just what I meant.

Q. Then tell us why that five per cent item of water enters into the paper board? You said it was necessary for scoring.

A. It is. It has to be that for scoring, and if you put it over the dryer system long enough to get the maximum killing effect of bacteria, you do not have much water left in the board.

Q. You got a sterile product for Kimberly-Clark,
1821 that they use for Kotex?

A. Yes.

Q. And that was creased and everything else, was it not?

A. Yes.

Q. After your employment by the Ex-Cell-O Corporation, to which you referred, was terminated, did you advise Dr. Herman Bundesen that you believed the research then reported did not establish that the use of paper containers for milk might safely be authorized by public health officials?

Mr. Schaefer: Will you read that question, please?

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. I don't understand the question yet.

Mr. Gariepy: Q. After you took Exhibit No. 4, in December, 1937, in to Dr. Bundesen, did you, subsequent to that date and the date of making that report, advise him that single-service containers for milk might not be authorized safely by public health officials or by the city of Chicago?

A. Yes, I think I did.

Q. When?

A. I think that was May, the last of April or in May of that year.

Q. Was that a written report or verbal?

1822 A. I don't recall which it was. I know I told him about it and I may have written it.

Q. And when did this Sealrite employment start? This was in May that you advised Dr. Bundesen?

A. This was in June.

Q. June, the next month?

A. Yes.

Q. Then it is not a fact, as you testified yesterday, that your experience with Sealrite from June to December, 1938, gave you this experience and this information on which you based your opinion?

A. Yes, I think that is right. I did not know that the paper container was absorbent at the time I made this report to Mr. Scott. I thought it was only when the paraffin chipped off and there was a bare spot left, that the container was absorbent. It was not until subsequently, during March and April, that I investigated the paper containers and found all of them to show the same type of absorption.

Q. Then it was not your experience with Sealrite that caused you to give Dr. Bundesen that advice?

A. I gave him that advice before I was with Sealrite.

Q. That is in May, 1938?

A. Because of the absorption, yes.

Q. That is in May, 1938?

A. Yes.

1823 Q. The absorption element was the sole element on which you based your conclusion and your recommendation to him that the container could not be made safe for the delivery of milk, is that it?

A. The absorption was a disturbing factor to me, and I reported that to him as such.

Q. Besides being a disturbing factor, did it prevent the container from being safe for the use of fresh fluid milk?

A. I think so, yes.

Q. Did you ever measure the amount of the absorption, Doctor?

A. Why, I weighed some, but I have not measured it very accurately, no.

Q. You heard Dr. Prucha testify here that he measured the absorption and he found four drops in a quart, did you?

A. I heard him testify, yes.

Q. Do you believe he was honest in that testimony?

Mr. Schaefer: The witness had not finished his prior answer.

Mr. Gariepy: Hadn't you finished, Doctor? I want you to finish.

Mr. Schaefer: With respect to Dr. Prucha's testimony.

The Witness: A. Yes, that was the smallest
1824 amount he found.

Mr. Gariepy: Q. Did you hear him testify that he found any larger amount than four drops?

A. Yes.

Q. And how much larger amount did he say?

A. As I recall, up to four cc.

Q. How many drops is that?

A. Four times fifteen.

Q. Sixty drops?

A. Yes.

Q. And that presents a health problem?

A. Yes.

Q. If there is no bacteria in the paper board and there are four to sixty drops of absorption in the paper board, how does a health problem arise?

A. It is seldom that the board is sterile, and if the board is not sterile—

Q. Is a glass bottle sterile?

The Master: Let him finish his statement here. Go ahead, Doctor.

The Witness: A. (Continuing.) —and if the board contains bacteria, they will get into the milk, and then if the board is sterile, it contains plenty of dead bacteria that have been enmeshed in the fibres during the paper making process. Those dead bacteria can be dissolved into the milk.

Mr. Gariepy: Q. Are they spore forming?

1825 The Master: Q. Is there a health problem there?

A. I think there is, yes.

Q. Why?

A. According to the number of bacteria that are there. It is a type of vaccine. They are not growing bacteria, they are not living bacteria, but they are dead bodies of bacteria.

Mr. Gariepy: Q. How much bacteria is contained in a quart of milk, Doctor, dead bacteria?

The Master: That is a pretty general question, is it not?

Mr. Gariepy: Yes.

Q. How much, Doctor?

A. I don't know. I could not say that.

Q. And what is the purpose of pasteurization, if it is not to kill this dead bacteria further, make it more dormant?

A. That is what it is.

Q. That is what it is, Doctor?

A. Yes.

Q. Are they living bacteria or are they dead bacteria in a quart of milk, Doctor?

A. There are both.

Q. And pasteurization gets rid of them, doesn't it?

A. Gets rid of them. Not all of them.

Q. And you don't know how much bacteria there are in a quart of milk, do you?

1826 A. No.

Q. Now, if the paper board happens to be sterile, as you say it is at times, there wouldn't be any public health hazards or danger by reason of this absorption, as you say?

A. Yes, I think there would be.

Q. If the paper board is sterile and it takes in a few drops of milk, and there is nothing in the board that can contaminate the milk, where does the puublic health problem arise?

A. There will be a good many bodies of dead bacteria, which will be resin, which will be alum, which will be the sizing materials that are in the paper.

Q. Aren't there literally thousands of bacteria in milk after the pasteurization process? Do you know that?

A. Yes. There are 200—yes.

Q. And that is, pasteurized milk that has been approved, say, by the city of Chicago?

A. Yes.

Q. Is anybody injured by reason of drinking milk with that bacteria in it, after the pasteurization?

A. No. It is a different type of bacteria.

Q. What type of bacteria is it in this paper board that you say may be found from time to time, that is so harmful and presents this health problem, even when

1827 dead?

A. There are soil bacteria that are growing in the soil and form part of our biological cycle of nature by decomposition of the organic manner.

Q. What are the kind of bacteria in milk that are killed, Doctor, by pasteurization?

A. They usually come from the udder of the cow. They are a type of what we call milk bacteria, what the milk sanitation calls his milk flora.

Q. You don't call that soil bacteria?

A. They are not the same type of bacteria we find in paper.

Q. Is there any difference in their effect?

A. Yes.

Q. Explain elaborately, Doctor.

A. Those bacteria in the soil differ from those in the milk, in that the soil bacteria are primarily decomposing types of bacteria. Those present in the milk are primarily those that act on sugars. They are the milk souring group, primarily.

Q. When they are dead, Doctor, what difference does it make?

A. It is the protein content that makes the difference.

Q. Is there any acid in milk?

1828 A. There is no acid in fresh fluid milk just as it comes from the cow.

The Master: Q. What effect do these dead bodies of flora or cow bacteria have upon the milk?

A. Nothing. They are the fermenting types, usually, that sour the milk. The fermenting types, not the decomposing types that break down protein material.

Q. That is, the dead bodies have a souring effect on the milk?

A. No, sir. Only living ones.

Q. I am talking about the dead ones.

A. The dead ones are practically harmless, of that lactic acid souring group.

Q. They are what?

A. They are practically harmless.

Mr. Schaefer: You are talking about the bacteria in paper and the Doctor is talking about it in the milk.

The Master: No, I am talking about the bacteria that comes from the cow, that have been killed by the pasteurization process.

Q. You say that some of them are in the milk?

A. Yes.

Q. And I am asking what effect do those dead bodies of cow bacteria have upon the milk?

1829 A. I don't think they have any effect. They are present in buttermilk, naturally sour milk of all

kinds. These bacteria produce the acid from the sugar, and when the acid gets concentrated enough it kills them off.

Q. You say by pasteurization some of these cow bacteria are killed?

A. Yes.

Q. They remain in the milk?

A. Yes.

Q. Those are the dead bodies?

A. Yes.

Q. Do those dead bodies have any effect at all upon the milk?

A. I don't think they do, if they are in a reasonable number, but certainly a high bacterial count would have, and then to pasteurize the milk with a high bacterial count, well, it is not wholesome mik.

Q. Now, let us take a point further, Doctor. If those same dead bacteria are absorbed into the walls of the paper container and sort of flow back and forth between the inside of the wall and the milk, do those bacteria have any effect upon the milk, those dead bacteria?

A. You would not have the same type. It would not be the milk souring group.

Q. It is the same bacteria. You said the milk is 1830 absorbed to some extent?

A. Yes.

Q. You say the milk would be to a reasonable extent germ-free. Now, all that the milk would have would be dead bodies that came from the cow?

A. Yes.

Q. Now, if the walls of the paper container absorbs milk, they therefore absorb only the dead bacteria and such live bacteria as may still be in the milk?

A. Yes.

Q. What effect upon the milk do these dead bacteria or even these live bacteria have, when they go into the walls of the paper container and come back into the milk?

A. I think they will alter the milk.

Q. Any more than if they do not go into the walls of the paper container?

A. Yes.

Q. Why? That is what I am getting at.

A. If it goes into the wall of the paper container, you are adding something to the milk and you are adding a

variety of bacteria, whether living or dead, that is foreign to the milk.

Q. You mean you are going to bring into the milk bacteria that were not in the milk originally, but were in the walls of the container?

1831 A. Yes, sir.

Q. Dead bacteria or live bacteria?

A. Yes, sir.

Q. Have you any idea what the effect would be of those dead bacteria that were found originally in the walls of the paper container, rather than in the milk?

A. I would expect them to be more toxic. I would expect the proteins to be more foreign and they would be the more irritating of the bacteria, in the wall of the container, and there is a large number of them.

Q. That is, the dead bodies of those bacteria would be more harmful than the dead bodies of the bacteria which originally were in the milk?

A. I think they would, yes.

Q. Is there any reason for that?

A. Simply the matter of the complex protein and the matter of their being so foreign, so little experience with them, and there are so many of them. They are a protein decomposing group of bacteria and I think they would be much more toxic than the flora ordinarily present in milk.

Q. Even though dead?

A. Yes, sir.

Mr. Gariepy: Q. Doctor, do not the acid forming bacteria of milk restrain the growth of soil bacteria in the paper?

1832 A. No.

Q. Is there an acid forming bacteria in the milk?

A. Yes.

Q. Do you know what the United States Public Health Service standard is with regard to the number of bacteria allowed per quart?

A. I know it is 30,000 per cc.

Q. And that is permissible as milk that does not present any health problem?

A. Yes.

Mr. Schaefer: That is pasteurized milk?

The Witness: That is pasteurized milk, yes.

Mr. Gariepy: Q. And are those live ones or not?

A. Yes.

Q. They are live bacteria?

A. Yes.
Q. Thirty thousand?
A. Yes.
Q. Three hundred thousand per quart and thirty thousand per centimeter, that is right, is it not, Doctor?
A. Approximately that, yes, sir.
Q. I think the computation was in error. That would be three million per quart, wouldn't it, Doctor, rather than three hundred thousand?
A. Well, it is not quite a thousand, but we usually consider a thousand cc to the quart. It is not quite a thousand, but whatever the computation would come to.
1833 Q. What is the business of this Sealrite Corporation that you did work for from June, 1938, to December?
A. They manufacture paper containers for food and milk products.
Q. Did you ever approve of the paper container that they manufacture for food and milk products?
A. No, sir.
Q. What was your work for them?
A. My work was of a sanitary nature, starting with the raw material and going through the mill, and the conversion plant, increasing the sanitary safety, and instructing and outlining programs for personal hygiene of the employees.
Q. Did you have anything to do with the matter of the making of the paper board for caps and the technique employed in manufacturing those caps?
A. I have observed it there, yes.
Q. Is not the Sealrite Corporation the largest manufacturer of paper board caps for glass milk bottles in the world?
A. I could not say that.
Q. Did you ever inspect their making of paper board for milk bottle caps, at the Sealrite Corporation?
A. Oh, yes.
Q. Had you ever visited a paper mill manufacturing fibre board for paper milk bottles at any time before
1834 December 4, 1937, other than Kimberly-Clark mills, manufacturing these cellulose products that you testified about?
A. No, sir.
Q. You knew Dr. Breed and Dr. Sanborn, you testified

yesterday, the former twenty years and the latter three years?

A. Yes.

Q. Are they competent, efficient men in the research field with regard to paper products and bacteria?

A. Yes.

Q. Did you so consider them when you went there in November, 1937?

A. Yes, sir.

Q. To secure data with regard to making a report to Dr. Herman Bundesen?

A. Yes.

Q. Do you consider those men honest in their research work?

A. Yes.

Q. You included your summaries of their reports of research work in Plaintiff's Exhibit No. 4 here that you handed in?

A. Yes.

Q. Had you any reason to suspect that their figures, concerning the bacteria count on the paper board, that you asked them to get from the Cherry River Paper
1835 Company at the time you went there, were in any way doctored up or falsified?

A. No.

Q. You also know Dr. Martin Prucha, who testified here?

A. Yes.

Q. How long have you known him?

A. I suppose close to ten years.

Q. Do you consider him an honest, capable bacteriologist, and an experienced one?

A. Yes.

Q. Have you any reason to suspect that the experiments he performed upon paper board for two years and testing paper machines and the bacteria count on paper board are in any way untrue or false?

A. His proctocals are not. His experiments, I think, are sound.

Q. What about the results of his experiments; do you consider them false or true?

A. You mean by results, interpretation?

Q. The findings that he reported at various times with regard to testing paper board, concerning stability, absorption and sanitary qualities.

A. The results of his test in the form of written reports and material are sound, and, I think correct.

1836 Q. You included those in your report of December 4th, Plaintiff's Exhibit 4, that you handed in to the Board of Health?

A. Yes.

Q. Have you had any experience that causes you to doubt that Dr. Prucha's experiments and research in the field of paper board are in any way unsound or untrue since that time?

A. His experiments are not, no.

The Master: Q. What is it, then?

A. I disagree with his interpretation of some of his experiments, Master.

Mr. Gariepy: Q. Which one of his experiments that he performed at the University of Illinois over a period of two years and six months do you disagree with?

The Master: He didn't say.

The Witness: A. I don't disagree with his experiments at all, but I place a different interpretation on them. I would evaluate them differently.

Mr. Gariepy: Q. They are not worth anything, is that it?

A. Oh, yes, they are worth a whole lot.

Q. I see.

A. But every experimenter can draw his own

1837 conclusions from the experimental data that have been presented. That is the reason we present our experimental data in such detail. The author can draw his own conclusions, while somebody else can draw their own conclusions from the same data.

Q. Then his conclusions that he has drawn from his research work are not true, or not accurate?

A. No, I would not say that, no.

Q. I see.

A. I would simply differ with some of them in some respects, but that we know. I have discussed that with him.

Q. Tell me which one of the conclusions that Dr. Prucha has drawn from his experiments and research work on the single-service container and the paper board you disagree with?

A. Self-sterilization of paper is one of them.

Q. What else?

A. The matter of the dryer sterilizing the paper.
Q. What else? That is two.
A. The bactericidal effect of paraffin.
Q. What?
A. The bactericidal effect of melted paraffin or hot paraffin.
The Master: Q. Anything else?
A. I can't think of anything else right offhand.
1838 Mr. Gariepy: Q. Did you perform any tests on the bactericidal effect of paraffin?
A. Yes, I have performed a few.
Q. When?
A. In the spring of 1938.
Q. Did you report those to the Board of Health?
A. Yes.
Q. Did you ever send Fieldcrest Dairies, who had an application pending then for the use of Pure-Pak containers involving the use of paraffin, the results of your report?
A. No, I did not.
The Master: Suppose we have a five minute recess here.
(A short recess was here had, after which the proceedings were resumed as follows:)
Mr. Gariepy: Q. How long have you known Dr. Paul Tracy, who testified here, and who is with the University of Illinois Husbandry Department?
A. About four or five years, I think.
Q. Do you know of any of his research work and writings and scientific articles?
A. Yes.
Q. With special reference to the single-service container?
A. Yes.
1839 Q. Do you consider him competent and efficient in his field of endeavor and work?
A. Yes.
Q. Did you so consider his research work and did you consider it reliable when you made up this report in December, 1937, and included part of his reports and writings and findings herein?
A. Yes, sir.
Q. Is it not a fact that bacteriologists in doing research work perform a very large number of tests before they draw their conclusions?

A. Yes.

Q. And do you consider the tests that you performed in the year 1938 more reliable and more responsible than the tests performed by Dr. Prucha and Dr. Tracy in the years 1937 and 1938 and up until 1939 here?

A. Not any more reliable, but I think just as reliable.

Q. When did you do this research work of yours, what year?

A. I did it in 19—you are referring to the paraffin?

Q. I am referring to the Pure-Pak container, the sterility of the board and the sanitary aspects of the board.

1840 A. I don't think it was on Pure-Pak. I don't know what container it was on.

Q. When did you do it, Doctor?

A. As I said before, in March and April of 1938.

Q. And how much time in March and April of 1938, did you expend or put forth on that work?

A. I would say probably not more than 25 or 30 tests carried out, not more than that.

Q. And do you consider those as accurate and as sound as the number of tests that Dr. Prucha and Dr. Tracy have conducted on this subject?

A. I considered them sound, yes.

Q. Are they as sound and as reliable as compared to the number Dr. Tracy and Dr. Prucha report here?

A. The number, no, but the number is a secondary factor.

Q. Then the point concerning the bacteriologists performing a large number of tests is not significant; you can find the same result on one or two or three tests, and that would be just as reliable, is that it?

A. No. No, that does not follow.

Q. Now, how long have you known Dr. Vaughn, who is the Commissioner of Health of Detroit?

A. Oh, I have known Dr. Vaughn for twenty or

1841 twenty-five years.

Q. And do you consider him an efficient milk sanitarian and public health expert?

A. Well, he is a public health administrator. I would not call him a milk sanitarian.

Q. Do you consider him a public health expert who is efficient and competent?

A. Yes.

Q. And did you so consider him in the months of November and December, 1937?

A. Yes, I did.

Q. Do you know Mr. Palmer of the Detroit Board of Health?

A. I met him when I was there. I did not meet him before.

Q. You never knew him before?

A. No, sir.

Q. Does he hold the same position with the Detroit Board of Health that Paul F. Kruger, who testified here, does with the Chicago Board of Health?

A. A comparable position, yes.

Q. And did you discuss with him there a matter with regard to the sanitary aspects of single-service containers of the city of Detroit, from their experience and use?

A. Yes.

Q. Was anybody present at the time that you held
1842 that conference with Mr. Palmer, securing that information for this report?

A. Yes, sir.

Q. Who?

A. Dr. Vaughn, Dr. Meader, who is in charge of the bacteriological laboratories in the Detroit Board of Health, myself and Mr. Scott.

Q. Was Mr. Hoffman, sitting here, present at the time when you were talking to Mr. Palmer of Detroit?

A. There was a second man besides Mr. Scott. There was a man accompanying Mr. Scott. Who, I don't recall.

Q. How many hours or minutes would you say you were in conference with Mr. Palmer with regard to the Detroit condition, securing information from him for this report?

Mr. Schaefer: I object to that.

Mr. Gariepy: Q. Do you know how much time you put in in checking with Mr. Palmer concerning the Detroit situation on the use of the paper container which you referred to in this report?

The Master: I will let him answer.

The Witness: A. It was during the afternoon. I don't recall. It might have been an hour. It might have been two hours. I don't recall.

Mr. Gariepy: Q. Do you consider Dr. Meader a competent, honest, reliable bacteriologist?

1843 Mr. Schaefer: That is objected to.

Mr. Gariepy: Did you so consider—

Mr. Schaefer: Just a minute. If the Master please,

that is objected to. We have gone pretty far afield here and I have not objected to Dr. Arnold's opinions as to the competency and reliability of witnesses who have testified here. Now, we are going beyond that field and we are going into the realm of Dr. Arnold's opinion with respect to—well, there have been three or four people mentioned so far, and I apprehend there will be more. What he thinks of those men and their work is of no consequence in this lawsuit.

The Master: I will let him answer with respect to this one, and you can renew the objection when others come on.

Mr. Gariepy: Read the question.

(The record was read as above recorded.)

Mr. Gariepy: Q. Did you so consider him in 1937, in the months of November and December, when you consulted with him on this subject?

A. Yes, sir.

Q. Do you know how many single-service containers for fresh fluid milk are being used daily or monthly in 1844 in the United States, and with the consent of health officers, in cities?

A. No, sir.

Q. What investigation, if any, have you made to ascertain that amount?

Mr. Schaefer: Now, if the Master please—

Mr. Gariepy: Wait a minute, Mr. Schaefer. You put this man on as an expert witness here. I did not object to what was said yesterday, for three hours.

The Master: Let him make his objection.

Mr. Gariepy: All right. Excuse me, Master.

Mr. Schaefer: I object to the question, on the ground that we are extending the realm of permissive use of paper containers. I objected to the evidence originally and the Master let it in subject to my objection. Now, we are going into whether an investigation of that use was made. The use itself, I am strongly convinced, is immaterial in this lawsuit.

The Master: The question is what investigation, if any, the witness made to ascertain the amount of single-service containers.

Mr. Gariepy: The amount in use.

The Master: In other cities.

Mr. Gariepy: Of single-service containers.

1845 The Master: In other cities.

Mr. Gariepy: That is right.

The Master: I will let him answer the question.

The Witness: A. I have not made any investigation.

Mr. Gariepy. Q. Has anybody on the Board of Health of the city of Chicago made any investigation or check-up, that you know of?

A. I do not know.

Q. Do you know of any instances where disease or epidemics can be traced to the use of the single-service milk bottle in any city?

A. No. I answered that once before.

Q. No, I asked you about children once before, Doctor.

A. About what?

Q. About children before, babies. I will withdraw it, if I did.

A. Yes, that is the second time that question was asked.

Q. I am sorry if I embarrassed you.

The Master: Well, it has been answered the same way both times, so it is all right.

Mr. Gariepy: Q. Doctor, now let us get back to this matter of the use of the glass milk bottle. When does the real danger in the use of the glass milk bottle, with regard to diseases, in quarantined places, really exist?

1846 A. When?

Q. When. Is it after the quarantine or does the public health hazard exist before the thing is quarantined and before you stop it?

A. I don't understand what you mean by your question, before the quarantine.

Q. Well, let me try to put it a little clearer. In a case where there was quarantine by reason of communicable disease and you trace it back to a glass milk bottle, when has that danger and how long has that danger with regard to that glass milk bottle been existing previous to the time you put on the quarantine?

Mr. Schaefer: Will you read that, Mr. Golding?

(Record read as above recorded.)

The Master: Is there an assumption there that disease was caused by the glass milk bottle?

Mr. Pariepy: Q. Let us assume that it has been caused by the glass milk bottle, Doctor, or traced to it.

Mr. Schaefer: Then what is the pending question.

Mr. Gariepy: Then the pending question, Mr. Schaefer, is how long has that danger been prevalent, been existing,

before they quarantined the place and prevented a further use of that same bottle, without this extra steriliza-
1847 tion?

Q. How many days is that, Doctor, usually?

The Master: The only testimony here is, as I recall it, is that after a place has been quarantined—

Mr. Gariepy: That is right.

The Master: (Continuing)—then they do not permit them to use glass milk bottles. But I do not recall any testimony here that any glass milk bottles were the cause of the disease in the first instance.

Mr. Gariepy: Q. Have you ever been able at any time and in your experience, Doctor, in public health or in bacteriology, to have occasion to trace any disease to a glass milk bottle?

A. No.

Q. Have you ever heard of diseases or epidemics, where there was occasion for quarantine, being traced to a glass milk bottle as the carrier of it?

A. I think there are such instances on record.

Q. Before the quarantine goes on at the place where the bottle was used, how long usually is it that the danger from contamination concerning the use of that bottle has existed, in hours, days or weeks?

A. It depends upon the incubation period of the disease.

1848 Q. Don't they usually quarantine after they have found the bottle and traced it as having come from that place three or four days?

A. I don't understand where the bottle comes in.

Q. The bottle has been going to the house where the disease is, Doctor.

A. During the incubation period?

Q. Yes.

A. You cannot make a diagnosis. How can you quarantine? We quarantine as soon as we make a diagnosis.

Q. And in the meantime the bottle has been going there and the bottle has had this contamination to spread the disease?

A. Yes.

Q. That is right?

A. It cannot be helped.

Q. That is right?

The Master: Q. You say there are instances of records where the bottles have been the source of the diseases?

A. By elimination only, not by proof. That was the only thing that fitted into the epidemical picture. There was no proof.

Q. In what instances would you say the bottle might be the disease source?

A. In case the bottle was the only outside con-
1849 veyor that came into the home, that could have brought in the disease.

Q. Would you say it would be the bottle or the milk in the bottle, or what?

A. Both. Of course, a bottle cannot carry it, because the contents grow the organisms. If a bottle was contaminated and filled with milk, the contamination grows in the milk.

Mr. Gariepy: Q. Then, Doctor, there is a time when the bottles remain in circulation before the disease has been diagnosed, is there not?

A. Yes, sir.

Q. At the time that you went to see Dr. Breed and Dr. Sanborn in November, 1937, you were thoroughly familiar, from your ten years' consultant work with Kimberly-Clark, with the bacteriology of cellulose products, were you not?

A. Yes, sir.

Q. Had you taken bacterial counts on pulp for Kimberly-Clark?

A. Yes.

Q. At that time did you acquire your information about the behavior of bacteria in cellulose substances, such as Kleenex and Kotex?

A. Yes.

1850 Q. The fibre board used in manufacturing paper containers is also a cellulose product, is it not?

A. Yes.

Q. From a bacteriological standpoint and in making your tests for the number of bacteria, is there any distinction between the behavior of bacteria in a cellulose product such as Kleenex and a cellulose product such as fibre board?

A. There is some difference, but in principle it is the same.

Q. What is that difference, if the principle is the same?

A. Both of them are cellulose fibres. One of them is

a purified cellulose fibre, without any foreign matter of any kind added.

The Master: Q. What one is that?

A. That is the Kimberly-Clark tissue product. That is pure cellulose. Now, the paper board is not purified, even the sulphide pulp is not purified to the extent that the tissue products of Kimberly-Clark are purified. In addition to that, there is resin and various sizings added to it, which alters it in detail, but it is still physically cellulose products.

Q. So far as the fibres are concerned, they act about the same, do they?

A. In principle the same.

1851 Q. Now, you are referring to bacterial action?

A. Yes.

Q. What method of disintegrating the pulp for manufacturing the raw pulp did Sealrite use, if you know?

A. They used the Sanborn method.

Q. Is that a reliable method?

A. Yes.

Q. Is that mechanical or is that a chemical method?

A. That is a disintegration method.

Q. Is that a mechanical method?

A. Yes.

Q. It is mechanical?

A. Yes.

Q. Doctor, what method of disintegrating this raw pulp or manufacturing this raw pulp did Sealrite use?

A. They use mechanical and chemical both.

Q. Both?

A. Yes.

Q. You have referred frequently in your testimony to the capillary action or attraction caused by tubular forms of cells. Where did you have your experience or make your tests from which you reached the conclusion that the tubular structure of the cells cause this capillary action?

A. That is in botany.

Q. In botany?

A. Yes.

Q. When?

A. I had botany with Professor Goebel at Munich.

1852 Q. When was that, Doctor?

A. 1913, 1912 and 1913.

Q. And you were perfectly familiar with that same

action in December, 1937, when you prepared this report, Exhibit No. 4?

A. Yes, sir.

Q. You do not mention it in there, do you?

A. No.

Q. As the result of your studies for Kimberly-Clark, you were undoubtedly familiar, were you not, with the behavior of bacteria and tests for bacteria in these cellulose products?

A. Yes.

Q. You testified that clusters of bacteria were drawn by capillary action into the tubular cells and that for that reason the disintegration test was inaccurate?

A. Yes.

Q. The reason for this inaccuracy, you claim, is that instead of each colony which develops representing one bacteria, it might represent X number of bacteria, is that correct?

A. Yes.

Q. To some extent this is also true of the rinse test in glass bottles, is it not?

1853 A. I don't think so. If you shake well, I think you get a uniform distribution.

Q. The shaking well is done approximately how many times?

A. I think about twenty times, fifteen or twenty times.

Q. Fifteen or twenty times?

A. Yes.

Q. And the purpose and method of this hand shaking —that is what it is, is it not?

A. Yes.

Q. (Continuing.) —is to do what?

A. Is to rinse off the sides and suspend the material uniformly in the rinse water.

Q. Is it not to dislodge the bacteria?

A. It is to rinse them off the sides, yes.

Q. That is a physical process and not a chemical, is it not?

A. A physical, yes.

Q. That rinse test?

A. Yes.

Q. And that is the test you use on glass milk bottles?

A. Yes.

Q. Is it not a fact that in performing the rinse test

on a glass bottle the clusters or clumps of bacteria are never completely broken up, so that the colony of bacteria which is counted on performing the rinse test of the glass bottle may represent more than one bacteria
1854 or an unknown quantity, which you refer to as X?

A. It might. The possibility is there.

Q. And that might apply also in the paper bottle?

A. Yes.

Q. Then the test concerning the rinse test on heat in regard to the accuracy and the X number of bacteria is the same?

A. Yes.

Q. Is the capillary attraction of the tubular cells you testified to a physical or chemical process?

A. It is probably more physical.

Q. In breaking up the clusters of bacteria in the tubular cells you have a physical problem and not a chemical?

A. I think it is more physical than chemical, but I do believe there is some chemical.

Q. If this tubular cell itself is broken by the physical treatment in here, of any type, that will scatter the clusters of bacteria that you refer to, is that right?

A. No.

Q. Then they are all together?

A. Yes, sir.

Q. In this one colony of bacteria containing X
1855 number?

A. You mean the fibre is there?

Q. Yes.

A. And the bacteria adhere to the fibre.

Q. And there is an X number then?

A. Yes, on the fibre.

Q. Then it is not the tubular shape that causes it, is it?

A. No, I don't think—that is the reason it is not all physical. Those that are tubular shaped will have more bacteria on them than the disintegrated fibres. The disintegrated fibres still have bacteria adhering to them.

Q. How will you go about breaking up the tubular cell structure as to be able to count the actual number of bacteria in a given number of cells?

A. I spent a lot of time trying to do that, and I have not succeeded.

Q. Do they do it by the rinse test in any way, that you know of?

A. You haven't cellulose fibres in the rinse test.

Q. You are sure about that, are you?
A. I don't think you have. I don't know where they come from.
Q. Unless the tubular form of cell was present on the paper to which you are applying the disintegra-
1856 tion test, your criticism would not apply, would it?
A. No.
Q. Do all forms of paper have the tubular forms of cells?
A. Yes.
Q. Did the paper you tested for the Sealrite Corporation and upon which you changed opinions in May, 1938, show the tubular fibre to which you testified?
A. Yes.
Q. Was that paper used for milk containers?
A. I think it was.
Q. You are not sure about it?
A. There were so many samples tested. I know there were some milk container samples in the test lots.
Q. Have you made any independent tests of fibre board or cellulose products, other than the Kimberly-Clark and for the Sealrite Corporation?
A. Yes.
Q. For whom?
A. A disintegrated container, unparaffined container.
Q. For whom did you perform those tests?
A. For my own information. They were sent to me by American Can and by Ex-Cell-O.
Q. When was that?
A. That was early in 1938.
Q. When did Ex-Cell-O send you some early in 1938?
1857 A. They sent some to my home address, a box of—it was either six or twelve—unparaffined containers.
Q. From Detroit?
A. From Detroit, yes.
Q. Did you ever report to them the result of those tests?
A. No, I never did. Part of them are still at home, in my library.
Q. Explain what you mean by pulp which is manufactured by the chemical instead of by the mechanical process, to the Master.

A. The chemical process is a cooking process, where the lignin and resins are dissolved out of the cellulose fibres. It is a chemical extraction method for the purpose of purification.

The Master: Q. What about the mechanical?

A. The mechanical method is such that the logs, instead of being put in large cookers under pressure and steam and heat and alkali, as in the sulphide or cooker method of extraction, in the mechanical method there are grinders, and those grinders are regular carborundum stones. The logs are put in the grinder and pressed with severe atmospheric pressure, against those rotating carborundum stones, and it grinds off the pulp. It comes out a bluish yellow creamy mass, right out of the grinder, and
1858 then is washed several times and is used as mechanical pulp. It is disintegrated mechanically and then it is disintegrated chemically.

Mr. Gariepy: Q. The chemical process breaks the fibres down, doesn't it?

A. Not always. No, it does not break them down. That is, it is hoped they won't be broken down. If they are over-cooked, they will break down, but it is the purpose of the paper chemist to merely extract, and he wants to extract from the wood, leaving the fibres as long as he can, and as nearly intact as he can, so as to give stability and strength to the paper.

Q. When the chemical process is carried on and finished does not the material result in a flaky material?

A. Yes.

Q. And when the mechanical process is ended, isn't that a sort of a beady type of material?

A. No, sir.

Q. Is there any difference in the type of material when it gets through the two processes?

A. There is a little difference in the color, but there is very little difference between the two pulps as
1859 you see them.

Q. At what temperature is this cooking process that you refer to carried on, if you know, in the paper board mill, and at what temperature?

A. It is a high temperature, but I could not give you the temperature of the vats.

Q. And what is the acid or the liquid put in there?

A. They first use alkali and then neutralize it with acid.

Q. What acid?

A. Sulphuric.

Q. Would you say that this pulp, after it had gone through the chemical cooking process, is shapeless, or does it have shape?

A. Oh, yes, it has shape.

Q. Would you say that this material is not flaky and that the fibres are subject to capillary action, is that so?

A. Yes, sir.

Q. Did I understand you to say it was flaky or not flaky, Doctor?

A. I don't know just what you mean by flaky.

Q. You know what a snow flake is; you know what soap flakes are?

A. Oh, no, it is not like that.

Q. It is not?

A. Oh, no.

1860 Q. What is it?

A. It is fibrous. It is pulp. That is all. Pulp is pulp.

Q. Would fibre board made from a chemical formed pulp be more easily disintegrated for bacterial tests than wood made from a mechanical pulp?

Mr. Schaefer: You mean paper?

Mr. Gariepy: Paper board.

A. I don't know that there would be any difference. I have not observed any difference.

Q. Have you ever attempted to ascertain by experiments whether there is any difference?

A. Well, I have disintegrated both and I did not observe any difference.

Q. When did you do that?

A. It was done at Sealrite, when I was there. It was done in the laboratory that was put in there.

Q. They had the mechanical process at Sealrite?

A. They had both the mechanical and chemical.

Q. And you tried both of them, did you?

A. Yes.

Q. Why did you make the test, Doctor? Did you make it to ascertain whether it was free from bacteria or not?

1861 A. I made the test from the first raw material to the finished product, step by step.

Q. Why?

A. To ascertain, as best we could, the sanitary qualities of each step.

Q. The amount of the bacteria?

A. Yes.

Q. Did you in those tests determine the relative amount of bacteria in each, one made by the chemical and the other by the mechanical process?

A. Not that I know of.

Q. Those are reliable tests, those disintegration tests, are they?

A. They are the only tests available. I don't think they are reliable.

Q. Do you know of any more accurate tests?

A. I do not.

Q. Has the Health Department of the City of Chicago made any disintegration tests on Cherry River Paper Company board?

A. Not that I know of.

Q. Did you ever make any on Cherry River Paper Company board?

A. Not to my knowledge.

Q. Have you ever seen the Cherry River Paper Company mill in Virginia?

A. No, sir, I have not.

Q. You are not acquainted with any of the sanitary methods, then, that are employed there?

A. Except what I heard testified to by Dr. Sanborn.

1862 Q. You believe that testimony that you heard?

A. Yes.

Q. Have you ever visited the Gardner-Richardson fabricating plant?

A. No, sir.

Q. Did you hear the testimony concerning the sanitary methods there employed, with regard to the hospital, and sanitation for the employees and the storage of the paper and keeping the paper?

A. Yes.

Q. You were present at the time those exhibits went in showing the keeping of large blocks of paper and putting them on cars for shipping and so on?

A. Yes.

Q. You heard Mr. Fisher testify concerning the warehouse and the care taken in the storage of the paper, didn't you?

A. I heard him testify.

Q. Do you consider those sanitary methods for the prevention of contamination?

A. What he testified to, yes.

Q. Have you any reason to believe that those methods are not employed?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Did you see the results on No-
1863 vember 16, 1937, of the Breed-Sanborn tests of the Cherry River board?

A. I don't recall the date. I saw some tests, yes.

Q. When you were at Geneva to see Dr. Breed and Dr. Sanborn?

A. Yes.

Q. Did they make any additional tests at your request?

A. Yes, sir.

Q. Were you satisfied with the result of those tests?

A. Yes.

Q. Did you know at that time the method or technique employed in performing those tests?

A. Yes.

Q. The results of those tests were satisfactory to you, were they not?

A. The results of the tests showed an improvement.

Q. Were they satisfactory to you or not?

A. They were not sterile. Therefore, it was not satisfactory. I thought I could make them sterile.

Q. Did you report anything in Plaintiff's Exhibit 4 to Dr. Bundesen, after you had been there and had these tests made and checked, concerning the fact they were unsatisfactory to you?

A. Except the first paragraph, in which I said that cardboard of a satisfactory sanitary quality can be obtained and used for this purpose. I was thinking of steriliz-
1864 ing the product, which I thought I could do at that time.

Q. Have you done it since?

A. No, sir, I have not.

Q. You were satisfied with the methods that they employed at that time, were you not?

A. That is the only method available.

Q. Why have you changed your mind now with regard to the method being improved on?

A. Why, just from knowledge that I have always possessed. I don't know of any way of improving on it. I don't think the product is perfect.

Q. Doctor, having your knowledge which you acquired from the Kimberly-Clark consulting work and by which you gained your familiarity with cellulose products and knowing the methods used in performing the tests, you were satisfied that those tests proved your statement in Plaintiff's Exhibit 4 that a sterile board could be obtained, weren't you?

A. Yes, sir.

Q. Is it not a fact that you were not referring to the future in this statement, Plaintiff's Exhibit 4, referring to this cardboard, but you were referring to the time that the report was made, and that you were then satisfied that the Cherry River Paper Company board was essentially sterile?

1865 Mr. Schaefer: I didn't get that.

Mr. Gariepy: Read it.

(Record read by reporter as above recorded.)

The Witness: A. No, there were several specimens of the Cherry River board that were sterile. I thought it was possible to make it all sterile. There were low counts—where there was a bacterial count made, they were very low.

Q. Will you explain this phrase from page 4 of your report of December, 1937, Plaintiff's Exhibit 4, reading from the first line: "Cardboard of a satisfactory sanitary quality can be obtained and used for this purpose." What did you mean then, Doctor?

A. I meant that there was some of the board sterile, that is, sanitary, and I thought that was safe. The other counts were very low and I thought they could be made sterile, inasmuch as there were some of the counts that showed sterility.

Q. You were referring to the present time, then, that is, December, 1937?

A. Yes, sir.

Q. Doctor, do you require absolute sterility of a glass milk bottle?

A. No, sir.

Q. Why do you want to require it of paper milk bottles?

A. I don't know where the bacteria comes from,
1866 and I don't know whether they come from the cover or come from the employees. I don't know where they come from.

The Master: Q. In the case of the paper?

A. In the case of the paper. It is without the jurisdiction of the health officers.

Mr. Gariepy: Q. Do you know where they come from in the glass bottle at all times?

A. They are under our inspection, under our jurisdiction.

Q. The city dumps and the places where they gather up the bottles, are those under your inspection?

A. The glass bottles are washed properly, no matter where they come from.

Q. Do you inspect the Milk Bottle Exchange washing?

A. No.

Q. Or any of the processes employed there in picking up and washing and returning bottles?

A. No.

Q. You testified that this absorption item in the paper board presented a health problem, is that right, Doctor?

A. Yes, sir.

Q. If you thought that a health problem was in-
1867 volved, due to the absorption in the use of paper containers, why did you not test the milk from such containers?

A. I did not think it was necessary to test the milk from such containers.

Q. That was your theory?

A. Yes.

Q. That it was not necessary?

A. Yes.

Q. Then the use of paper containers is not objectionable from a public health standpoint, unless the milk therein is contaminated by the container, is that right?

A. Read that question.

(Mr. Gariepy's question was read by the reporter as above recorded.)

A. Yes.

Q. And if you do not test the milk, then you cannot tell whether the container is giving you any contamination?

A. Yes, I think so.

Q. How are you going to tell whether it is giving you contamination if you have not tested the thing that the public is going to drink?

A. There is no use of testing the entire product, if it

is put into a porous container. You have got to control the sanitary quality of the container.

1868 Q. But if you do not know what the porous container gives into the milk, how are you to be able to say that the milk is poisonous or deleterious to health, that is in the container?

A. Because there are thousands of conditions and you cannot test but one, and the paper containers are not uniform.

Q. Are not they more uniform than glass bottles?

A. No, I don't think so.

Q. Are not their counts more uniform?

A. I don't think so.

Q. Have you checked upon the counts?

A. You mean the disintegration?

Q. Right.

A. The disintegration or rinse test?

Q. Both tests.

A. No, I don't think so.

Q. What counts do you know of in the past two years on the paper board as compared with the counts on the glass milk bottle that show a lack of uniformity?

The Master: What counts?

Mr. Gariepy: In the paper container. He says that the paper container is not uniform, that the counts are not uniform, and therefore they cannot do anything about it.

The Master: What does that have to do with milk

1869 containers?

Mr. Gariepy: He talks about the fact that the glass is standard.

The Master: He is talking about these dead bodies of bacteria in the wall of the paper container and he is not talking about any dead bodies in the wall of the glass bottle. I think he explained that before.

Is that right, Doctor?

The Witness: Yes, sir.

Mr. Gariepy: Q. Have you ever found pathogenic bacteria in paper board used in paper milk bottles?

A. No.

Q. I am referring to those that are harmful.

The Master: Pathogenic?

Mr. Gariepy: Yes.

The Witness: A. They are harmful. The two are the same thing.

Mr. Gariepy: Q. You would not have submitted this report, Plaintiff's Exhibit 4, to Dr. Bundesen of the Board of Health, if you thought that paper milk containers presented a public health hazard, would you?

A. No, sir.

1870 Q. You never saw Mr. George D. Scott, about whom Mr. Schaefer asked you yesterday, until he was referred to you by Mr. Paul Krueger of the dairy division, is that right?

A. Yes, sir.

Q. In November, 1937?

A. Yes, sir.

Q. You did not think he was asking of you anything improper by seeking to have you do this research work and present a report to the Board of Health, did you?

A. No, sir.

Q. You would not, simply because of the fact you were receiving a fee of $250 a month or a fee of so much per month over a period of four months, plus your expenses, have in any way falsified this report to the Board of Health, would you?

A. No, sir.

Q. When you prepared Plaintiff's Exhibit 4, you honestly believed that the information you were submitting was responsible evidence of the matters therein discussed, didn't you?

A. Yes, sir.

Q. And do you so believe now?

A. No, I do not now.

Q. What reason have you to distrust any of the

1871 information which you submitted in this report?

A. I think the information is sound, but it does not go far enough. There are factors I did not know anything about that are operating that should be included in considering the sanitary standards of the paper container.

The Master: Q. What was the date of that report, Doctor?

A. December, 1937.

Mr. Gariepy: December 4, 1937.

The Master: Q. When did you find those other factors?

A. 1938, the middle of the year, around April, May, June and July, along in there, maybe May, June and July, but right in the middle of the year.

Mr. Gariepy: Q. You testified on direct examination

that this was merely a preliminary report. What further work did you do in May, June or July of the following year and what did you contemplate when you handed in this report? Let us take first one, Doctor. You said this was a preliminary report?

A. Yes.

Q. What further work did you contemplate after you handed in this report?

A. I wanted to know what further work Mr. Scott
1872 wanted to do, what was being planned to do, whether to investigate some angles of it further, or not.

Q. What did you plan to do when you were going to investigate this over a period of four months and then you handed in this report in one month?

A. The one thing I wanted to investigate was the containers after they were filled with milk, as to their durability, particularly the leakage, the number of accidents that might occur in the handling, doing mainly an efficiency engineering study, from an unbiased source, and I thought that from the standpoint of paraffin, the temperature of paraffin to be used, that should be looked into. There were several points not discussed in great detail, as there was no further desire for my services after this report was rendered. There was nothing more said and I didn't say any more myself.

Q. Didn't you in this report submit data concerning the durability of paper containers?

A. By mechanical means, not by ordinary handling procedures.

Q. Are not these mechanical means more severe than the ordinary handling of a bottle by a housewife or in the store?

1873 A. Possibly not, no. They are not hitting on sharp corners. They are not hitting on the corners of steps. They are not subjected to the same type of ordinary dairy practice handling that a container might be subjected to.

Q. In other words, these tests shown in this report, which were made at the University of Detroit, with regard to 400 pounds upon a container, were not reliable, in your opinion, with regard to ordinary handling as between the housewife, in the store and in the ice box and on the table, is that right?

A. I think they were reliable, but I don't think they extended far enough in a good many ways. There are no

sharp points against it. There are many things that could happen to the container.

The Master: Q. What is the effect of a sharp corner?

A. Penetrating the paper and making leakage.

Mr. Gariepy: Q. Do you know of any instance, Doctor, where with ordinary handling the single-service milk container ran into sharp points and caused leakage?

A. No.

The Master: Q. Is there anything short of leakage that a sharp point might do?

A. I don't know, Master. I should think it could
1874 partly puncture, it might fracture, it might scrape into it. I don't know. It was those things I wanted to find out.

Q. Let me suggest something to you. What if you happen to hit the corner so that some of the paraffin might be chipped off.

A. Yes, sir, that is a possibility.

Mr. Gariepy: Q. Is there any leakage in the glass milk bottle or leakage problem?

A. Problem, you say?

Q. Yes.

A. Yes.

Q. And that existed in December, 1937?

A. Yes.

Q. And you so advised Mr. George Scott, by letter, that there was a leakage problem in the glass?

A. Yes, sure there is, yes, sir.

Q. Does that leakage problem in the glass present any different problem than leakage you say might exist in the paper container, from a public health standpoint?

A. I don't hardly think so. I was just interested in ascertaining how frequently it occurred and whether it did occur or not.

Q. Have you now detailed to the Master all the work that you contemplated doing after you filed this preliminary report in December, 1937, on this single-service con-
1875 tainer problem?

A. I don't recall what was contemplated at this time. It was rather hazy. We were going to work together and get what information we could.

The Master: Q. Let us put it this way, then: What other work have you done or what other information have you obtained since you submitted that report?

A. I have obtained considerable information, Master.

Q. Have you detailed that in your direct testimony?

A. Yes, sir.

Mr. Gariepy: Q. Did Mr. Scott at any time make any suggestions to you with regard to preparing this report and embodying your conclusions therein, which would mean that you put something in the report that you did not honestly believe?

A. No, sir.

Q. This $250 fee and expenses that you testified on direct you received, covered the first month's work, is that right?

A. Yes.

Q. After you discussed the report with Dr. Bundesen, why did you do nothing further, to complete what you describe as further work on this report?

A. There was no request for me to continue.

1876 Q. Did you write any letter to Mr. Scott or Mr. Dean with regard to continuing any further work?

A. I don't recall that I did. I don't think I did.

Q. Did you write them any letter with regard to the Ex-Cell-O machine being set up and being supervised by the Board of Health here in the city of Chicago?

A. Mr. Dean saw me.

Q. Did you write any such letter concerning that, Doctor?

Mr. Schaefer: Who?

Mr. Gariepy: Q. You, Doctor.

Mr. Schaefer: Write to whom?

Mr. Gariepy: Write to Mr. George Scott.

Mr. Schaefer: Who?

Mr. Gariepy: Mr. George Scott. Mr. Schaefer, let me continue, please.

Q. Did you write a letter at any time in the month of December, 1937, after you handed this report to Dr. Bundesen concerning the Board of Health of the city of Chicago supervising the installation of this machine?

A. No.

1877 Mr. Gariepy: Mr. Reporter, will you mark this Plaintiff's Exhibit 83?

(The document referred to was thereupon marked by the reporter Plaintiff's Exhibit 83 for identification.)

Mr. Gariepy: Q. Will you look at that letter, dated

December 17, 1937, on University of Illinois stationery, and tell me whether it is signed by you?

A. Yes, sir.

Q. Did you write that letter on that date?

A. Yes, sir.

Q. Did you not say something in that letter concerning the supervising by the Board of the installation of the Pure-Pak machine?

A. No, sir.

Q. After you had this conference with Dr. Bundesen *on or about December 8, 1937, did you write Mr. Scott* regarding the result of the conference, as it relates to this report?

A. I think I did, yes, sir.

Q. When you were discussing this report with Dr. Bundesen, did he criticize you severely for having undertaken this work first without consulting him?

1878 A. I don't recall him doing that, no, sir.

Mr. Gariepy: Mr. Reporter, will you mark this Exhibit No. 84?

(The document referred to was thereupon marked by the reporter Plaintiff's Exhibit 84 for identification.)

Mr. Gariepy: Q. Will you look at Plaintiff's Exhibit 84 for identification, Doctor. Was that written by you?

A. Yes.

Q. Was the attached carbon copy of the letter, dated December 9, 1937, addressed to Dr. Thomas Parran, also attached?

A. Yes.

Q. And that was in connection with this report?

A. Yes.

Q. Were the facts as recited in this letter to George D. Scott, dated December 9, 1937, true and accurate at that time?

A. Yes, I think they were, yes, sir.

Q. Then is it not a fact that Dr. Bundesen, on seeing you, was so definitely set against the paper container that he criticized you for not consulting him before you undertook the work?

A. No, sir.

1879 Q. Did you have any conversation with Mr. Dean regarding the results of your conference with Dr. Bundesen on this report?

A. I think I did. I know I saw Mr. Dean. I must have discussed that with him.

Q. Did you discuss anything further with him in regard to Dr. Thomas Parran and Mr. Leslie Frank of the United States Public Health Service as it relates to the use of the single-service container in the city of Chicago?

A. With whom?

Q. Mr. Leslie Frank.

A. To whom? I mean, I discussed it to whom?

Q. With Mr. Dean.

A. I don't recall.

Q. You may have had such a conversation?

A. Yes.

Q. And can't remember it?

A. Yes. I may have had it, yes, sir.

Q. Did he exhibit to you in any such conversation the original of a letter from the United States Public Health Service, addressed to him, signed by Dr. Leslie Frank, pertaining to the use of the single-service container in the city of Chicago?

A. Yes, I recall him showing me a letter. Yes, I know he did.

1880 Q. Did you have any conversation with him concerning that letter of Dr. Frank to him, a copy of which went to Dr. Bundesen, or not?

A. Yes, I know I did. Yes, I know we had a conversation about it.

Q. And did you not tell him in that conversation that Dr. Frank had gone through Chicago just recently and that Dr. Bundesen had seen him, so that this letter to Mr. Dean concerning the use of single-service containers in the city of Chicago would be cancelled?

A. I do not recall saying that. I don't remember whether Mr. Frank was through or not.

Q. You may have said so?

A. Yes, sir.

Q. And you may not?

A. Yes, sir.

Q. Who fixed the figure, Doctor, of $1,000 for this research work; you or George Scott?

A. It was at my suggestion, sir.

Q. On the basis of $250 a month?

A. Yes.

Q. Is it not a fact that the reason you received only

$250 was that you reported to Mr. Scott that Dr. Bundesen was so unalterably opposed to the paper milk container, that regardless of any more work that you could do on the question you would not be able to get a permit for its use in the city of Chicago?

1881 A. I don't think so, no.

Q. You may have said so and cannot remember it, is that it?

A. I don't think I had any reason to make that statement.

Q. Did you make such a statement, or do you remember it or not?

A. I don't remember it, no.

Q. Is it not a fact that you asked George Scott, at the Palmer House in Chicago, when you and he reviewed the report that you had prepared, in what form he wanted the permit.

A. I don't think so. The permit would have to be a written permit, passed by the Board, and I don't recall just—

Q. Did you ask the question?

The Master: Let him answer the question.

Q. You don't recall what?

A. I don't recall discussing it, because it is a fixed rule in the Health Department.

Q. You were not connected with the Health Department at that time?

A. No, I was not connected with the Health Department at all, no.

Mr. Gariepy: Q. Did you ask him, Doctor, my question is, as to the form in which he wanted the permit for the use of paper milk bottles in the city of Chicago?

A. No.

1882 Q. And the reason you did not ask the Ex-Cell-O Corporation or George Scott for any more than $250, or complete the work that you were to undertake for a period of four months, was because you found that your efforts and the Ex-Cell-O Corporation's money would have been wasted, isn't that true?

A. No, I don't think that is true.

Q. Why was it, then, that you did not go ahead with any further work for them? You were not on the Board of Health then, were you?

A. No. I understood from Mr. Scott that he was mainly

interested in getting a permit for distribution in Chicago, that is, the installation of his machine in Chicago, and was not interested in any further research work that I might be able to contribute, which would not be very much anyway, as I did not have a machine at my disposal to work with, and I think that reason was the reason we stopped there. There was no official resignation, nothing official about it.

The Master: Q. Was there any work you did that was any different from the work he had done before?

A. I don't do any work. I simply reviewed the material available and got a report. The only work I could say I did was the two interviews I had, one in Detroit and one in Geneva. I did no laboratory work, no work with
1883 the container or with the machine.

Q. Just what work did they hire you to do?

A. Compile a report.

Q. Didn't they have reports before?

A. There were isolated instances. The report of Dr. Prucha and Dr. Tracy and a report from the engineering department of Wayne University, and a report on paraffin, they were all isolated instances. My function was to get them all together, as in Exhibit 4.

Q. But you only rendered a preliminary report?

A. Yes, sir.

Q. What good was that, until you had everything finished?

A. That was as far as I went with this work.

Mr. Gariepy: Q. Why didn't you go any further with this work?

A. There was no request to go any further with it.

Q. Didn't you have some sort of an agreement for four months' work, Doctor, $1,000 at $250 a month?

A. Yes, in conversation with Mr. Scott. I understood on the telephone when I talked to him in Detroit there, he said, "We will let it stay the way it is," or, "I will let you know in the future," or something of that kind. It was left indefinite.

1884 Q. You left it indefinite or did he leave it indefinite? Who left it up in the air?

A. Probably both of us. Probably one as much as the other. I think we understood each other.

Q. Is it not a fact that you understood, after seeing Dr. Bundesen and after seeing this correspondence of Mr. Leslie Frank and Dr. Thomas Parran at Mr. Dean's office,

you fully understood that regardless of how much research work you did on the subject, you could not get a permit?

Mr. Schaefer: That is objected to.

Mr. Gariepy: No, he can answer that.

Mr. Schaefer: The witness' understanding is not material.

Mr. Gariepy: He told about Mr. Scott's understanding.

The Master: I will let him answer.

The Witness: A. I don't know whether I can answer that question.

Mr. Gariepy: Read the question, Mr. Golding.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. No.

Mr. Gariepy: Q. Did you tell George D. Scott that on the telephone one morning, from Chicago to Detroit?

1885 A. Yes. He was speaking of a permit within a short period of time, which I told him was impossible to get, as it would have to—there would have to be an inspection system or certification system of some kind developed, and it could not be developed quickly.

The Master: Q. Who told you that?

A. Dr. Bundesen.

Mr. Gariepy: Q. Was that in writing or verbal?

A. That was verbal.

Q. Was not one of Dr. Bundesen's objections to the paper milk bottle or the paper container that they were not recognized by the United States Public Health Service?

A. Yes, sir.

Q. Are they so recognized at this time?

A. Yes, the last modification.

Q. Were you present in January, 1939, when George D. Scott called at the office of the Board of Health and saw Dr. Robert A. Black concerning this permit?

A. No, sir.

Q. Were you not seated outside the door of that room with Mr. Paul F. Krueger?

A. I don't recall seeing Mr. Scott.

Q. Did you hear any conversation between Dr.

1886 Robert Black and George D. Scott on that occasion, concerning the issuing of this permit?

A. No, sir.

Q. You heard George D. Scott testify here?

A. Yes.

Q. Concerning that conversation?

A. Yes.

Q. And his asking Dr. Black what further they could do to secure this permit, to satisfy him and the Board of Health, did you?

A. Yes, sir.

Q. And you did not hear any part of it?

A. I was not in the room at all. I didn't know he was there.

Q. Or outside?

A. No, sir.

Q. Did the Ex-Cell-O Corporation and George D. Scott do everything that you requested or suggested or what you thought was necessary for the preparation of this preliminary report, up to the time that it was submitted to Dr. Bundesen?

A. Yes, sir.

Q. And up to the time that Paul F. Krueger saw it?

A. Yes.

Q. And you put in the three hours you mention in this letter of December 9th to George D. Scott with Dr. Bundesen going over this report?

1887 A. It was not all on this report, no, but there were several other things I discussed with him. I was there about three hours. I was there all afternoon, but I don't think it was all on that report. I cannot recall the conversation.

Q. Will you explain this phrase in this letter to George D. Scott, dated December 9, 1937, Exhibit 84: "I have never been concerned with a situation so hopelessly involved as yours."

What did you mean by that phrase, "hopelessly involved"?

A. I mean hopelessly involved, because so many questions were asked as to the origin of the paper, the handling of the paper, and there was the idea that there should be some sort of inspection and certification system; there was no machinery set up for it; it would take time to do it; and how the machinery was to be developed, where and by whom. For one seeking a permit, as Mr. Scott was, you cannot put your finger or could not put your finger on anything to make it move. That is what I referred to, sir.

Q. Is there any sort of inspection and certification system in the use of the glass milk bottle in the City of Chicago?

A. No.

1888 Q. But that is what you referred to concerning the paper bottle?

A. Yes, sir.

Mr. Gariepy: Mr. Reporter, will you mark this Plaintiff's Exhibit 85 for identification, and this Plaintiff's Exhibit 86.

(The documents referred to were thereupon marked Plaintiff's Exhibits 85 and 86, respectively, for identification.)

Mr. Schaefer: Q. When you say there is no inspection, you do not mean there is no inspection of the glass bottle, do you?

Mr. Gariepy: Mr. Schaefer, will you please. I have the witness. I did not interrupt you.

Mr. Schaefer: All right.

Mr. Gariepy: Q. Will you look at Plaintiff's Exhibit 86, a letter dated November 29, 1937, on the stationery of the Treasury Department, signed "Leslie Frank." (Handing document to the witness.)

A. Yes, sir.

Q. Is that the letter that you referred to when I asked you concerning correspondence between Mr. Frank and Mr. Dean regarding the use of the single-service container in the city?

A. Yes, sir.

1889 Q. Will you look at Plaintiff's Exhibit 85 and tell me whether you ever saw that letter in the presence of Mr. Dean or at his office?

A. Yes, I saw that at his office, yes, sir.

Q. And is that the letter over which you had this conversation which you said might have taken place but you did not remember?

A. Yes.

Q. Dr. Arnold, is it not a fact that after you saw this correspondence at Mr. Dean's office, you then and there told him that you thought that you saw the handwriting on the wall and there was no use of going any further, that Dr. Bundesen had saved or helped Mr. Frank in his job and you could not do anything more on it?

A. I don't think I said that.

Q. Will you say you did or did not make any such statement?

A. I did not make it.

Q. You did not make it?

A. I am sure I did not, no, sir.

Q. Did you say that to him when you were going over to see Dr. Herman Bundesen with Plaintiff's Exhibit 4 here?

A. I don't think I said that at any time, no.

1890 Q. The Master asked you a few minutes ago concerning your work in preparing this report. Did you not go to the Chicago Carton Company?

A. Yes.

Q. The fabricating plant where it was proposed to obtain cartons to use?

A. Yes, I did.

Q. And you reported upon the conditions concerning sanitary methods employed at said plant here?

A. Yes.

Q. And they were, in your opinion, sanitary?

A. Yes.

Q. Didn't you go to the Risdon Dairies, in Detroit, using the Pure-Pak single-service containers, and inspect the operation there?

A. Yes.

Q. And how long did you spend in the dairy inspecting the machine in actual operation bottling the milk?

A. I think the forenoon.

Q. All morning?

A. At least two or three hours, I think.

Q. Did you not make inquiry at the Providence Hospital in Detroit concerning their experience with single-service containers with patients in the hospital?

A. Yes.

1891 Q. From a public health standpoint?

A. Yes.

Q. Didn't you receive a reply that it was favorable?

A. Yes.

Q. That they found no contagion and no cause for denying their use to hospitals?

A. Yes, sir.

Q. Was it that experience and that information so obtained that caused you to recommend to Dr. Bundesen that the use of such containers in hospitals was one of the great advantages in the use of single-service containers?

A. That was part of it, yes.

Q. Then you were recommending the use of single-service containers in hospitals, for people that were sick and not up to par, but you do not recommend it for people that are in normal condition of health, is that it?

Mr. Schaefer: I object to that.

The Master: I will let him answer.

The Witness: A. No, I don't think so.

Mr. Gariepy: Q. But you do recommend it for people in hospitals?

A. If it is non-porous, which I thought it was at that time.

1892 Q. Then the non-porosity is the whole crux of the thing, isn't it, Doctor?

A. That is one of the principal factors.

The Master: Q. Do they use these single-service containers at the present time in hospitals?

A. In some hospitals, yes.

Q. In Chicago?

A. No, sir, not in Chicago.

Q. I suppose it would be a matter of judgment as to which would be the greater danger, wouldn't it, as to whether sick people might be made well by the use of the single-service container, or whether well people might be made sick by the use of some milk bottle that had been used in a sick room?

A. Yes, sir, that is right. It is a two-sided equation.

Q. But they do not use, you say, in Chicago, this single-service container even for contagious diseases?

A. No, sir.

Mr. Gariepy: Q. Do you know of any hospitals in cities that use the single-service container where they do not use it in the hospitals, like New York City, Philadelphia, Los Angeles, San Francisco?

A. I am not familiar enough with it to know, sir.

The Master: Q. Is there anything in this United
1893 States Health Ordinance on the subject that you know of?

A. On which subject, Master?

Q. On the use of single-service containers, in the sick room?

A. No, sir, not that I know of.

Mr. Gariepy: Q. Doctor, I take it that you have not checked the cities that are using the single-service container during the past two years, nor the amount of the use, that is, bottles per day, nor the extent of the use of the single-service container in hospitals.

A. No, sir.

Q. And without having that information, you consider

yourself competent to pass upon the merits, from a public health angle, of the single-service container, do you?

A. Yes, sir.

Q. And without knowing any diseases that have been contracted by reason of the use of the single-service container in the cities and villages that have had it and at hospitals that have permitted its use, you are still of the opinion that you are qualified to say that the single-
1894 service container presents a health problem?

A. Yes, sir.

Q. Were you in the Ex-Cell-O Corporation plant in Detroit when you went to make this survey?

A. Yes.

Q. Did you inspect the operation in the plant?

A. Yes. They started a machine for me in the plant.

Q. And how long did you put there in the plant watching the machine operate, in order to ascertain the health problem involved?

A. You could not tell the health problem involved from an empty machine running.

Q. From anything that it showed, with regard to metals used and so on?

A. I think it was very good. I was there two or three hours; two hours, probably.

Q. How many employees are used in filling milk on the Pure-Pak machine?

A. I don't remember. They were in the dairy, but I don't know how many were there.

Q. If I told you that only two men are employed, one at the end to take it out when it is finished and one at the other end to inspect the blanks, would you say I was wrong?

A. No, I would not say so.

Q. How many men are employed in a bottling plant
1895 from the time the bottle leaves the sterilizer and the last wash to the time it is capped and filled?

A. About three.

Q. Three?

A. Yes.

Q. The number of people that are employed in that filling process becomes a health problem, because of this human contamination element?

A. Yes.

Q. And the lesser employees used the lesser the health hazard?

A. Yes.

The Master: Do I understand you to say that the lesser the number of employees the lesser the health problem?

Mr. Gariepy: Yes. The less mechanical handling there is.

Q. Is that right, Doctor?

A. The less possibility of contamination.

The Master: Q. Let us turn it around. Let us assume that one of the men is very much diseased and you would get the full benefit of his contamination, where if you would distribute the work among more you would not get so much.

A. That is quite true, but the man would not be in the milk plant, under supervision, if they knew anything about it. Whoever holds the permit would be in violation
1896 of the ordinances and would stand the danger of revocation of his permit.

Q. But that sick man among a great number would not have so much work to do on the particular containers?

A. That is true in that respect, yes.

Mr. Gariepy: Q. And that sick man's condition could be detected in the plant distributing milk in Pure-Pak containers just as quickly and easily as in the plant putting up milk in glass bottles?

A. Yes.

Q. The inspector would find that out?

A. Yes.

Q. Did you open the paraffin bath in the machine at the Ex-Cello-O factory?

A. I probably did. I don't recall specifically anything specific about it, but I am sure I saw most all parts of the machine.

Q. Did you examine it at the Risdon Dairies, when the machine was bottling milk there?

A. I think I did, yes. I watched the machine, at least.

Q. Were either of these machines at this time giving off any rancid odors?

A. Not that I recall, no.

Q. Does paraffin in its natural state have a sweet odor?

A. I would consider it odorless.

Q. You would consider it odorless?

1897 A. Maybe it is not.

Q. When did you first become acquainted with the acidity possibilities of the oxidation of paraffin, Doctor?

A. As a student in chemistry.
Q. How many years ago was that?
A. Oh, it was a number of years ago.
Q. Well, it was all previous—
A. Twenty years ago.
Q. How?
A. Twenty years ago, I suppose.
Q. Twenty years previous to the time you handed in Plaintiff's Exhibit 4?
A. Yes, sir.
Q. Did you make any comment in that Plaintiff's Exhibit 4 concerning the possibility of oxidation of paraffin, the acidic possibilities?
A. I did not think it would oxidize. I did not think it was in there long enough to oxidize. I did not know that was a factor.
Q. Do you know how long it was in there?
A. I was told two hours.
Q. From the one day experience that you had at the Ex-Cell-O factory watching the operation of the machine and also your morning at the Risdon Dairies and then your conference with Dr. Vaughn and Mr. Palmer and Dr. Meater, as the result of those three check-ups, did you see anything which then appeared to you to present
1898 a public health problem concerning the use of this paper milk container?
A. No, sir.
Q. Did you ever visit the Detroit Sulphite Paper and Pulp Company?
A. No, sir.
Q. Did you at any time during this month that you did this work for Mr. Scott or the Ex-Cell-O Corporation request any money to go and visit a paper mill?
A. No, sir.
Q. You did not consider it necessary at that time, did you?
A. No, sir.
Q. Did anything that Dr. Bundesen uttered in the conversation with you in December, 1937, change your opinion about the suitability of the Pure-Pak container for the sale of milk?
A. No, sir.
Q. You still believed that these Pure-Pak containers presented no public health hazard after your conference with Dr. Bundesen?

A. Yes.

Q. Do public health standards, even of the most stringent type, for milk, require absolute sterility of the milk container?

A. No, sir.

Q. Then sterility or freedom from bacteria is a
1899 matter of degree, isn't that true?

A. Yes.

Q. Is the United States Public Health Service model ordinance and code generally considered a reasonable standard for milk sanitation?

A. Yes.

Q. And safe?

A. Reasonable and safe standard for milk sanitation, Doctor?

A. Yes, sir.

Q. The reason that the city of Chicago Board of Health is working on a revision of its ordinance is that, if approved by the city council of the city of Chicago, the city will continue to then be on the approved list of the United States Public Health Service, isn't that true?

A. I think so.

Q. Is it not a fact that the approval of the United States Public Health Service is accepted by all of the agencies of the federal government, in lieu of an inspection into things like interstate commerce, where the Interstate Commerce Commission had jurisdiction, and air travel, over which the Civil Aeronautics Authority has jurisdiction?

A. I could not answer that question. I do not know.

Q. Have you had occasion to take a plane ride
1900 in the last two years, from here to Philadelphia or New York?

A. No, sir.

Q. What?

A. No, sir.

Q. When you went attending the depositions you went by train?

A. Sure.

Q. Do you know whether or not, Doctor, they use paper milk bottles in the airplanes, on traveling to the east?

A. I do not know.

Q. What is that?

A. I do not know.

Q. Did you ever investigate that?
A. No, sir.
Q. You went on the train?
A. Yes.
Q. Is it not true that milk packed and delivered in paper bottles is used on the New York Central Railroad, which is subject to the jurisdiction of the Interstate Commerce Commission?
Mr. Schaefer: I object to that.
The Master: Sustained.
Mr. Gariepy: Q. Did you notice, Doctor, any use of the paper bottle on the New York Central Railroad on this trip?
Mr. Schaefer: I object to that.
The Witness: A. No.
1901 Mr. Gariepy: He says he did not, Mr. Schaefer, so it is all right.
Mr. Schaefer: That doesn't make any difference. It is still objectionable.
The Master: Go ahead.
Mr. Gariepy: Q. You are a member of the Board of Health now?
A. Yes.
Q. Don't you consider it your duty to consider the extensibility of the use of paper containers on carriers?
A. No.
Q. In hospitals?
A. No.
Q. For children and the sick and so on?
A. No.
Q. You don't consider that necessary?
A. No.
Q. Doctor, if the control of milk is an ever-changing problem, as you testified on direct examination, is not the experience of public health authorities throughout the country—and I am referring to public health authorities of cities—to be considered in determining whether or not the paper container presents a public health hazard?
A. Yes, possibly it is, yes.
Q. But you made no investigation?
A. No, sir.
1902 Q. Are you the advisor of the Board of Health on this point?
A. No, I don't think so.

Q. Who is?

A. I don't know.

Q. From the selfish standpoint of a mill operator making paper board intended for milk containers, is it not desirable for him to have healthy logs?

A. Yes.

Q. I think you mentioned moss on these logs and a cinder bed.

A. Yes.

Q. Is it desirable for him to clean out pitch pockets?

A. Yes.

Q. Regardless of whether he uses your cinder bed that you mention, is it desirable for him to keep the logs, whether bottom or top, free from whiskers of mould, as you put it?

A. Yes, sir.

The Master: Off the record.

(Discussion had off the record.)

Mr. Gariepy: Let me ask the witness this question.

Q. Doctor, do you know the mills that are making paper board for milk bottles today that have logs that have mould and whiskers on them and that are seated or allowed to rest on wet ground, and so on?

1903 A. No, I do not.

Q. Do you know of any mills that are making paper board that permit employees to work there where they do not have methods and means for keeping their hands clean, so as not to soil the paper board?

A. I don't know, no, sir.

The Master: Q. Do you know one way or the other?

A. No. I am not familiar with enough mills, Master, to draw comparisons.

Mr. Gariepy: Q. Is it not a fact, Doctor, that paper board from pulp manufactured by the chemical process would have to be sterilized by the time it reaches the calender stack, and if any of the logs have not been healthy, logs out of which this pulp is made, and if any pitch pockets have not been removed from these logs, or if the logs have not been kept dry or if the broke or trim you referred to yesterday that is being used sometime that in the manufacturing had been permitted to fall on the floor, that this pulp would be sterilized in the process?

A. In which process?

Q. Going through the mill.

The Master: You mean the chemical process?

Mr. Gariepy: The chemical process.

1904 The Witness: A. The chemical process or the other process?

Mr. Gariepy: Q. The chemical process.

A. The chemical process, yes.

The Master: Q. And to that extent you would say that is a sort of a self-purifying procedure?

A. Where it is heated in alkali, under high pressure and temperature.

Q. I say, if any bacteria during the process has gotten into the material, the rest of the process will tend to remove or destroy those bacteria?

A. Yes. But the great danger is when you have those logs around, having them come into the mill on conveyors, handled by the men, getting on the floor and in the air, you have got spores of mould that get on the shoes of the men, and they track them in the plant, and you get them into the pulp after it is clean. You get contamination in the pulp from spores brought in from a wood pile. That is a great danger.

Mr. Gariepy: Q. Will you recite one instance that you know of where the spores have gotten into the paper board in the mill by reason of the men tracking about there and so on?

A. Why, no. It is just common knowledge that 1905 those things do take place.

Q. You do not know the answer to that, do you?

A. I know of spores being transmitted through laboratories and through hallways and medical schools and office buildings, and the same thing could take place in a paper mill.

Q. And in a glass bottle dairy?

A. Yes, in any dairy.

Q. Do you know of any paper manufacturer making paper for milk bottles that is using chip at this time?

A. In what respect using chip?

Q. In the manufacture of this board.

A. For milk bottles?

Q. Yes.

A. No.

Q. It is easy to determine whether or not chip has been used in the manufacture of this board, is it not?

A. Yes.

Q. How would you determine it?

A. By chemical analysis, by staining the board.

Q. You could take it right here in the city of Chicago and do it, couldn't you?

A. You could disintegrate the board and use stains. You can tell the fibre, the amount of cooking and how
1906 many times it has been cooked and various things, from the stains that the paper chemist uses.

Q. You could do that right in the laboratory of the Board of Health here in the city?

A. Yes. It is a very acceptable method.

Q. Is it not a fact that reused waste paper or chip contains inks which discolor the paper and give it a greyish cast?

A. No.

The Master: Q. Doesn't it have a tendency to sort of blotch the paper?

A. Yes, it does, Master, providing you use chip on the outside, but these people who use chip board cover it with a virgin pulp, and what you have is a virgin pulp layer on both sides, with chip in the middle. That is common practice of those who use chip for that purpose.

Mr. Gariepy: Q. Then you can see it by trying it?

A. You can't see it without staining.

Q. You said those people that use chip in the board. Name some of those paper companies that are making paper board for milk containers that do use chip in it.

A. I don't know of any of them making paper con-
1907 tainers that use chip.

Q. Have you performed any tests to ascertain the amount of chip in a paper board?

A. No, sir.

Q. You testified yesterday that chip contains much bacteria. How do you know this?

A. I have disintegrated the board that contained chip.

Q. When did you do that?

A. I did that in 1938.

Q. And this board containing chip contains more bacteria than board made out of the virgin spruce pulp, doesn't it?

A. Yes.

Q. Then this shows, Doctor, to you, doesn't it, that there are tests that you are willing to rely on, that indicate the amount of the bacteria in the paper?

A. They are the best tests we have, yes. We have to rely on them.

Q. Wouldn't it be reliable enough for you to form a judgment and testify about it?

A. Yes.

Q. If paper is manufactured with poluted water supply, will any harmful bacteria survive the drying rolls, leaving out of consideration the calendering operation of the mill?

1908 A. Yes, I think they would.

Q. Have you ever had any experience finding it so?

A. I have found bacteria.

Q. When?

A. In paper.

Q. When?

A. In 1938, that have come from the river.

Q. What river?

A. Oswego River.

Q. Did you ever get any paper board from Cherry River or from Ex-Cell-O or American Can that had that in it?

A. They have bacteria of the same kind, yes.

Q. Did you get some like it?

A. Yes.

Q. When did you get paper board from Ex-Cell-O or from American Can, used for paper milk bottles, that had this same kind of bacteria in, that you referred to, in 1938?

A. In the spring of 1938, Dr. Fitzgerald sent them to me from the American Can, and I got some from Mr. Scott from the—they were some of the package that he had sent in to me.

Q. Did you ever report that finding and that result to these two men?

A. No.

Q. You didn't testify to that on direct, did you, Doctor?

A. Well, bacteria in paper—

1909 Q. No, no, Doctor, you did not testify to that on direct, did you?

Mr. Schaefer: I object to that.

The Master: The record will show.

Mr. Gariepy: Q. What part of the paper does the calendering operation apply to, Doctor?

A. The surface.

Q. And what does it do to the surface?

A. Shines it, gives it a shiny, hard gloss to the surface of the paper, on both sides.

Q. Does it make it impervious to bacteria from the air or not?

A. No, I would not say impervious, no.

Mr. Gariepy: Do you want to go ahead, Master? I have got at least an hour or an hour and a half more, and it is now 12:33.

The Master: We might as well meet again at two o'clock, then.

Whereupon, a recess was taken to 2 o'clock p. m. of the same day, Friday, October 13, 1939.

1910 (Caption—)

Friday, October 13, 1939,
2 o'clock p. m.

Met, pursuant to recess.

Present:

Mr. Gariepy,
Mr. Rall,
Mr. Schaefer,
Mr. Horan.

1910 The Master: You may proceed.

LLOYD ARNOLD, called as a witness on behalf of the defendants, having been heretofore duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Gariepy (Continued).

Q. Doctor, you testified on direct examination with regard to ice cream in paper containers, that you had control or the Board of Health had control of what went into the ice cream, is that correct?

A. Yes.

Q. You also have control of the quality of the milk in paper containers, do you not?

A. We don't have milk in paper containers.

Q. Well, places that permit the use of milk in paper containers have control of the milk, don't they?

A. I think so.

Q. Is not that control comparable to the control you have of the ingredients that go into ice cream that is sold in the city?

A. Yes.

Q. And when the ice cream is put in those paper containers that you referred to, you said it was frozen
1911 and therefore the possibility of contamination was not so great?

A. Yes.

Q. Does not that ice cream melt within a short time after it is put in the container and taken home from the drug store?

A. It might. It softens, not melts.

Q. And when it softens does not that bridge you referred to exist between the paper carton side and the melted ice cream?

A. I don't think to the same extent.

Q. There is a bridge there?

A. Ice cream is viscous. It is heavy.

Q. There is a bridge there, isn't there?

A. What?

Q. A bridge?

A. No, I wouldn't consider it a bridge in the sense of an aqueous bridge.

Q. Doctor, are you a pediatrician?

A. No, sir.

Q. Are you a gastro-intestinal expert?

A. I have done considerable work on the gastro-intestinal tract.

Q. Have you done considerable work on the gastro-intestinal tract of infants?

A. Yes, sir.

Q. Have you in your experience as a gastro-intestinal doctor or expert ever found any occasion or inci-
1911-A dent, rather, where a child was afflicted or diseased by reason of the swallowing of paraffin?

A. No, sir.

Q. Have you ever had any experience or do you know of any experience of anyone, or have you ever read of the experience of anyone where spicules of paraffin were found in the intestinal tract of a child?

A. I do not recall any, no, sir.

Q. Or of an aged person?

A. I do not recall any.

Q. Or from the drinking of milk in paper containers?
A. No, sir.
Q. The word "paraffin" itself is a combination of two words, two Latin words, is that right?
A. I don't remember.
Q. "Parum" and "affinis," is that right?
A. I don't know. I couldn't say. I am not versed well enough in languages to dissect a word.
Q. You testified further on direct, Doctor, that oysters used in paper containers, in your opinion, did not present a health problem, because the oysters are usually cooked, is that right?
A. Yes, sir.
Q. Are all oysters sold in paper containers cooked?
1912 A. I don't know. I think the most of them are. I think the majority are.
Q. You know that a lot of people eat oysters raw and they have oyster cocktails.
A. I thought they were shelled oysters.
Q. You know they have oyster cocktails, that you can put in a cocktail glass?
A. Yes.
Q. With some red pepper and some seasoning.
A. You put it in an alcohol solution, then.
Q. And you can buy those same oysters in paper containers, can you not, Doctor?
A. I presume so.
Q. Now, if there is any contamination at all, Doctor, how long a period of time must elapse before the contamination will set in, or is it momentary?
A. I hardly think it is momentary.
Q. How long a period of time must elapse, then, before such contamination from the use of the paper container for oysters would set in?
A. I have never determined that.
Q. Do you know of anyone who has?
A. No, sir, I do not.
Q. Do you know of anyone whoever used or secured oysters in paper containers who contracted disease from the paper container?
1913 A. Not to my knowledge, no, sir.
Q. Is it not a fact, Doctor, that dry air tends to kill non-spore forming bacteria?
A. Yes, sir.

Q. Is it not true, Doctor, that any contamination from water used in paper mills in the calendering process or from cold rolls, which you described on your direct examination, is a surface contamination and not a contamination in the body of the fibre board itself?

A. Yes, sir.

Q. That is also true of contamination resulting from the handling of the paper manually in the mill, is it not?

A. Yes, sir.

Q. And from the handling at the converting plant?

A. Yes, sir.

Q. You consider, do you not, that the paraffining operation, has some bactericidal effect, do you not?

A. Yes, sir.

Q. If the containers before being paraffined are essentially sterile, then the bactericidal effect of the paraffin operation is relatively unimportant from a public health standpoint, is it not?

A. It depends on what you mean by relatively sterile.

1914 Q. Well, as sterility is known in the industry and as regards public health, as sterility is known among public health officials.

A. Sterility means the absence of all bacteria.

Q. Is there such a thing known in the milk industry as absolute sterility in containers?

A. No.

Q. With regard to this manual handling and this manual contamination, is this surface or manual contamination easier or more difficult to discover than the contamination in the interior of the paper board?

A. I think they are both about the same. I do not believe there will be a great deal of difference in the method of detection.

Q. Is it not a fact, Doctor, that the number of live bacteria decreases with time on paper board?

A. Yes.

Q. How long, in your opinion, would a non-spore forming bacteria live on a dry surface of paper containing, we will say, five per cent moisture?

A. Depending in what medium the bacteria was deposited.

Q. Suppose it is deposited in no medium; just placed on the board?

A. I don't see how you could do that.

Q. You could not do it?

A. It is impossible.

1915 The Master: Q. What is impossible?

A. For a bacterium to be deposited on the surface of a paper board without being suspended, adhering to something, just a single bacterium by itself. I don't know how we could do that. You would have to put it in water or—

Q. Could not it remain on the board?

A. It might remain on the board, but it would be mixed up with something, from the source of it, either from the soil, with a little dirt or dust particle, or moisture.

Q. Let us say you put a colony of bacteria on the outside of the paper board.

A. That would last for days, and certain weeks.

Q. The paper board contains five per cent of moisture.

A. I would say it would last in terms of days or weeks.

Mr. Gariepy: Q. Does that answer apply to non-spore forming bacteria?

A. Yes, sir.

Q. Have you ever tried it?

A. Yes, sir.

Q. When?

A. In 1938, the spring of 1938, with the disinfecting power of warm paraffin or hot paraffin.

Q. You said on direct examination that a dry surface kills bacteria by desiccation. How do you account for

1916 the greater bactericidal effect of paraffin on wet paper than dry?

A. Because of the heat. When you heat water, you get a very penetrating substance that penetrates the cells and destroys them. That is the influence of moist heat on bacteria. It is very detrimental to bacteria.

The Master: Q. What is the temperature at which bacteria would die?

A. In moist heat?

Q. Take them both ways. A Bacterial death is always in relation to temperature and time. Boiling water will kill most bacteria, non-spore bearing.

Q. What temperature is that?

A. That is 100 centigrade or 212 Fahrenheit. It will kill them in five minutes, five to ten minutes. Usually five minutes boiling will destroy most of the non-spore bearing bacteria.

Q. What dry heat would be required?

A. 100 centigrade of moist heat takes about 160 of dry heat, for about an hour or an hour and a half, to do the same thing.

Mr. Gariepy: Q. Is it your opinion, Doctor, that the results of Dr. Prucha's experiments on the self-
1917-8 purification of paper are false or misleading?

A. No, I don't think they are either false or misleading.

Q. Is it your opinion that the surface of the wet plaque is so much dryer than the surface of the paper which had not been dampened that in the case of wet paper the process of dessication kills more bacteria than on the dry?

A. I didn't get that question.

Mr. Gariepy: Read it, Mr. Golding.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. I still don't understand the question. How could the surface of the wet paper be dry?

Mr. Gariepy: Q. As I understood you to testify on direct examination, the fibres pulled it in and left the bacteria.

A. Yes. That is on the wet plaque.

Q. On the wet paper?

A. Yes, containing bacteria in suspension, in the water.

Q. And on the dry plaque you say it has less bactericidal effect?

A. Yes.

Q. How do you account for that?

A. Because there is not any water to be pulled in.

1919 Then the drying means nothing?

A. Yes, sure, it means something.

Q. What does it mean?

A. You are applying bacteria dry to a dry plaque or wet? Which do you mean?

Q. Dry.

A. If you apply bacteria in a dry state to a dry plaque, you haven't any water, and they survive for a long period of time.

Q. The water keeps them living, or doesn't it?

A. There isn't any water there.

Q. If there is water on the board or in the board, does it keep them living or not, the bacteria?

A. I don't think it has much influence in the ordinary

board, the five per cent water. That is a pretty low water content.

Q. The question to you, Doctor, is, does moisture in the board tend to keep bacteria alive or not?

A. Yes, it will tend to keep them alive.

Q. In your experience and from the experiment you say you performed, how many weeks did non-spore forming bacteria keep alive on the dry board?

A. I didn't run it more than two weeks.

Q. And they kept alive?

A. Yes.

Q. The two weeks?

A. I found them at the end of two weeks. I did not carry it any further.

1920 Q. And did you identify them as the inoculating organisms or not?

A. Yes.

Q. Did you ever write up anything on those experiments from a public health standpoint?

A. No, sir.

Q. Did you make any tests to find out whether this same quality of bacteria lasts longer on glass than on paper?

A. No, I did not.

Q. Assuming that a paraffin bath is heated to a temperature of 185 degrees, is changed every two or three hours, do you have an opinion as to whether the paraffin would oxidize sufficiently to cause any acids which would be harmful to health?

A. Is the paraffin bath completely changed?

Q. Yes.

A. No, if there was a complete change.

Q. What experiments have you performed, Doctor, to determine whether any acids in paraffin are harmful?

A. None.

Q. Is it not a fact that milk has more acidity than any of the acids shown by Mr. Martinek in his experiments here yesterday?

A. Acidity, yes.

Q. And are these acids organic?

A. Yes, sir.

1921 Q. And are these acids organic in the oxidation of paraffin?

A. Yes, there is a variety of organic acids there.

Q. Let us assume that enough oxidation in a paraffin

bath is made to form acids of the maximum strength testified to by Mr. Martinek yesterday, and assume that this paper container is immersed in the paraffin bath; then assume it is cooled afterwards, until the paraffin is hard. In what form would the acid, if any, appear on the interior of the carton?

A. In the concentration that it is in the paraffin and on the surface of the paraffin exposed, according to the surface exposure of the paraffin and the amount of acid contained.

Q. Is it solid or liquid?

A. It is solid, with the paraffin.

Q. Did you mean on direct examination, Doctor, to say that if the interior of a quart of milk contains nothing of the solidified acidic substance, enough of this solidified acidic substance would get into the milk to make a health hazard?

A. What is that question?

Mr. Gariepy: Read it.

(Record read as above recorded.)

1922 The Witness: A. Those substances are soluble in milk and water.

Mr. Gariepy: Q. Would enough of them get in there to present a health hazard?

A. I don't know. They would be adulterants to the milk, but I don't know the toxicity of those adulterants.

Q. Did you perform any experiments to ascertain that, Doctor?

A. No, sir.

Q. Do you know of anyone that has?

A. Not to my knowledge.

Q. Is it not a fact that this would have to chip off in order to present any problem at all?

A. No, I don't think so.

Q. Staying right on the board surface itself presents a health hazard, is that correct?

A. Those decomposition products of paraffin are acids of various types and they are unsaturated acids, that is, they are altered paraffin. They are decomposition products of paraffin.

Q. Are not they weak organic acids?

A. They are organic acids and they are irritating organic acids and they are not the same organic acids as developed in the bacteria of milk.

Q. Do you know of anyone who has ever suf-
1923 fered any illness or irritation by reason of these acids being found in a paper milk bottle?

A. No.

Q. Have you ever heard of anyone like that?

A. No.

Q. Have you ever heard of anyone becoming ill by reason of oxidation of paraffin used in a paper milk bottle?

A. No.

Q. Did you make any experiments to ascertain the amount of the adhesives that come in contact with the milk in a Pure-Pak container?

A. No.

Q. Did you perform any experiments or experimental tests of the quality of these adhesives used on a Pure-Pak container or paper milk bottle?

A. I have of paper milk bottles, but not of the Pure-Pak type.

Q. When did you do that, Doctor?

A. In the summer of 1938.

Q. You determined that chemically, did you?

A. Well, no, bacteriologically.

Q. How?

A. By cultiure.

Q. Do you consider these adhesives that are found on this container harmless or not? I am talking about
1924 being harmless to public health.

A. No, I would not say they were harmless, no.

Q. Do you know of anyone who has become ill or do you know of any instance where disease has been created or spread by reason of the adhesives used on paper milk bottles?

A. No, sir.

Q. Do you ever perform or cause to be performed for the Board of Health of Chicago any test to determine whether the adhesives used in the Pure-Pak container get into the milk?

A. No, sir.

Q. Did you test the adhesives, Doctor, on the side seams of the paper milk bottle?

A. Yes.

Q. And on the bottom seal of the paper milk bottle?

A. Yes.

Q. Both could be tested bacteriologically, as you put it, rather than chemically, is that right?

A. I tested the adhesive as it was being applied in the molten state, obtained the sample and tested the adhesive as to its bacteriological content.

Q. As I understand, Doctor, you never performed any tests on the adhesive on the Pure-Pak container?

A. No, sir.

1925 Q. Do you know of any incident or have you ever heard of any experience of anyone or of any health official with regard to lead in the ink used on the outside of the paper container coming into the milk?

A. No, sir.

Q. Have you ever heard of anyone becoming ill or sick by reason of the printing on the outside of the container?

A. No, sir.

Q. You were here when Mr. Fisher of the Gardner-Richardson Company was testifying, were you not?

A. Yes.

Q. Do you recall his tearing the paper board blank to show the number of layers of paper, as to whether the ink penetrated or not?

A. Yes.

Q. You could see by the tearing of that paper blank how far the ink went, couldn't you, Doctor?

A. I think so.

Q. Did you ever measure this amount of offset that you referred to on your direct examination and said came on to the inside of the paper container?

A. That is so variable in various types of containers and at various times. It is not uniform.

Q. Did you ever measure it, was the question?

1926 A. No, I never have measured it.

Q. The amount of it?

A. No.

Q. Is it not a fact that the amount, if any, is so slight that it cannot be measured?

A. No, I don't think so. You can measure it. You can see it and you can obtain it and measure it, if you want to measure it.

Q. In the spring of 1938 or the summer of 1938, did you perform any experiments to ascertain the amount and the effect of this offset on milk in a paper container?

A. No, sir.

Q. Have you conducted any investigation to ascertain

the presence of offset in Pure-Pak containers used by the plaintiff here?

A. No, sir.

Q. Is it not a fact, from your observation, Doctor, here at the trial and the exhibition of these paper blanks, that if any offset occurs it occurs at a point or place on the blank less likely to chip and crack?

A. I don't think so, no.

Q. There is not any printing on the corners, is there?

A. No.

1927 Q. The printing is on the flat surface, on the gable roof and on the sides, is it not?

A. It depends on the way the blanks are stacked as to where the offset is.

Q. Did you observe any time in here with any blanks or with Plaintiff's Exhibit 2, which was the container we had, any offsets on the corners, where there was creasing or cracking or fracture?

A. I do not recall that particular container.

Q. Doctor, does this offset have anything to do with the matter of a good job of paraffining or proper paraffining, or not?

A. I don't think it influences that.

Q. Did you ever measure the amount of metal in the offset on a paper bottle?

A. No, sir.

Q. Have you performed any test to determine whether any metal gets into the milk from the offset?

A. No, sir.

Q. Or are there tests to determine that?

A. I think it could be determined, yes.

Q. But you have not done so?

A. No, sir, I have not.

Q. What is the largest possible amount in any standard measurement which you are able to give us of the metal which could get into a quart of milk from the worst

1928 job of offsetting that you have ever seen on the inside of a paper milk bottle?

A. I could not answer that.

Q. You testified on direct examination that the lead in this offset presented a health problem.

A. It does. It contains lead.

Q. But you never measured the milk or the amount of offset or the lead in the offset?

A. No. But lead is poisonous and it is adulterant to milk.

Q. But you don't know whether it gets into the milk or not from the offset, from the printing.

A. No, but there is a possibility of it.

The Master: Q. When you say it presents a health problem, do you mean there is actually a danger after the problem has been solved, or what do you mean?

A. I mean that there is a health hazard there. Hazard should be the word, Master, instead of problem.

Q. You mean there is a question there as to which there should be some attempt to solve?

A. Yes, there should be some attempt to solve. It certainly presents, from my knowledge of public health and bacteria and chemistry, a health hazard. It is something that is potentially harmful to health.

Q. Although you do not know the answer in a 1929 particular case?

A. I cannot give you figures. I do not know the methods well enough to determine the chemical reaction.

Mr. Gariepy: Q. Have you made any effort to ascertain from other health authorities where the paper milk bottle is being used what their experience has been with regard to this health hazard?

A. No, sir.

Q. Whether they found it real, or just a conjecture?

A. No, sir.

Q. You still want the Master to believe that the possibility of metal poisoning is present in the case of the use of the paper milk container because of the possibility that the offset would not be properly sealed with the paraffin and escapes into the milk, is that it?

A. Lead is poisonous.

Q. No, answer my question. Do you want the Master to believe that?

A. Yes, I do.

The Master: Let us get this straight.

Q. Is your department concerned only with health, or also with the taste, for instance, of milk, and other considerations?

A. Yes, we are concerned with the taste of milk, Master.

1930 The Master: What I am trying to get at, Mr. Gariepy, is whether your position is that it would

be unobjectionable if milk should contain a little lead and a little paraffin and a little something else, which it does not contain, we will say, in glass bottles.

Mr. Gariepy: No, that is not our position. Our position is that it is absurd to contend that there is lead in the offset or in the inks used and that that lead gets through the five layers of board into the milk or has at any time since paper containers have been used by public health officials.

The Master: What I would like to find out is this. You see, you are asking question now to bring out whether there is really any danger.

Mr. Gariepy: Real danger.

The Master: To health.

Mr. Gariepy: Yes.

The Master: Now, I am asking you if in your view it is unobjectionable, if there is not any actual danger, if there might be a trace of lead or might be some paraffin or might be some of these other things in the milk?

Mr. Gariepy: Our position on the lead conjecture is
that it is absurd, and if any lead should get through
1931 the five layers of board into the milk, such an in-
finitesimal amount would get in there as to not present any health problem at all.

The Master: I thought the Doctor's testimony the other day was not that the lead got through the five layers, but that the lead adhered to the underside of the board above, the one on which the printing had been done.

Mr. Gariepy: I asked him on cross here whether he knew of any instance where this offset on the inside, as he put it on direct, on the inside of the board, presented any problem concerning illness or sickness at all to persons by reason of that.

The Master: Now, I am going one step further. I say, let us assume that there is not enough lead and there is not enough paraffin that gets into the milk to cause a danger to health. Is it still objectionable on the ground that you may possibly get a foreign taste into the milk or you may get something in the milk that should not be there? I assume that the Board of Health concerns itself not only with things that may cause an injury to health, but also with anything that might get into the milk that should not get in.

Mr. Gariepy: Palatable or unpalatable?

1932 The Master: Palatable, or whether it appeals to the taste of people, whether they like to have anything in there, whether there is something in there or not, according to their likes and dislikes.

The Witness: Milk is so essential for growing children that anything that will off-flavor the milk will decrease the consumption. That of itself will act as a factor in increasing illness and retarding growth and so forth. The taste of milk is an important factor and a public health consideration.

Mr. Gariepy: Q. Doctor, do you know of any experience in the use of paper bottles by any of the health officials to show that the amount of offset affects the flavor or the taste of the milk?

A. No.

Q. Have you ever read of any such thing in the reports of milk sanitarians and from commissioners of health concerning experiments, or from bacteriologists, on this?

A. No, sir.

Q. What in your opinion, Doctor, is the largest amount of lead that could get into the milk from the worst job of offsetting, on the inside of the paper container, that you ever saw?

1933 A. I don't know.

Mr. Schaefer: That question has been asked and answered.

Mr. Gariepy: He said he doesn't know.

The Master: It has been answered again, then.

Mr. Gariepy: Q. Why do you say then, Doctor, on direct examination, that this presents a health hazard?

A. Because it is lead, and lead is always a health hazard.

Q. That is just a red flag?

A. Always, yes, sir.

Q. And that is true even though you have no experiments to support your conclusions in here, and there are no statistics on the fact?

A. Yes, sir.

The Master: Q. Can you conceive of a case where enough lead could get into the inside of the container to cause any health hazard?

A. Yes, sir. If that lead was constantly—if it was a young baby and every feeding contained a little lead, I could very readily see that. Lead has an accumulating

action, always. It certainly should not be ignored, and I would consider it a health hazard.

Mr. Gariepy: Q. Doctor, they feed babies ice cream when they get about seven or eight months old, don't 1934 they?

A. At times.

Q. And the ice cream container would have printing and the same type of printing and the same kind of lead that a paper container would have?

A. No.

Q. They use different types of ink?

A. They are made entirely different. They are a nest-style container, and nest-style containers are not offsetters. You cannot offset them. They are not printed in a way to offset.

Q. They are printed flat, aren't they?

A. Yes.

Q. You have seen these flat ice cream containers, with a little wire tab on them, or with a little white cord, haven't you?

A. Yes.

Q. And when they are printed flat, then the occasion for the offset will arise, will it not?

A. No. The print in use there is of a much different type than you use on the milk container. It is a different ink. It does not stand out as well, and it has more dye in it. The decoration and the whole printing of the nest-styling is a different process than that of the milk container.

1935 Q. What about the printing and the quality of the ink that is used on other food containers, such as cheese and butter and so on? Is that a different formula, too?

A. No, I think that they are about the same.

Q. You heard Mr. Taylor testify, from the Hilton-Davis Company here, that they used the same formula as on other products and liquids, didn't you?

A. Yes.

Q. You believe that testimony to be true?

A. Yes.

Mr. Schaefer: I move to strike the last question and answer.

The Master: Yes, it may be stricken as immaterial.

Mr. Gariepy: Q. If this paper milk container, Doctor,

is essentially or substantially sterile, as sterility is known among milk sanitarians, then the lack of paraffin at a particular point is not a public health hazard, is it?

A. Yes.

Q. Why?

A. Because practically sterile does not mean that it is free of bacteria, and it would have disease producing bacteria and still be practically sterile. It either does
1936 not have them or it does have them, and I would consider it a health hazard.

Q. Have you any experience where you found non-spore forming bacteria from those portions where the paraffin did not completely cover?

A. I have found it in disintegrating that area, yes.

Q. You did?

A. Yes.

Q. When did you do that?

A. In 1938.

Q. What time in 1938?

A. Oh, from May to December.

Q. The fact that you found bacteria in this area or this portion that was not completely paraffined, you say that that presents this health problem, because then there is a liquid bridge between the milk and this portion, and the bacteria will cross over?

A. It is possible, yes.

Q. You did not examine the milk to find out the amount, as I understood you to say this morning?

A. No, sir.

Q. Would not the amount of bactria be important?

A. They grow luxuriantly in milk.

Q. No. Would not the amount of bacteria be important?

A. No.

Q. One bacteria or one colony would be sufficient?

A. One typhoid bacteria can cause a case of typhoid fever, if it gets into the milk.

1937 Q. Did you ever find any typhoid bacteria on any paper container board?

A. No.

Q. At any time?

A. No, sir.

Q. Now, this point you brought out, Doctor, concerning milk exerting pressure on the cap—you remember that?

A. Yes.

Q. Would there not be considerable pressure on the cap if the bottle of milk were turned upside down?

A. Yes.

Q. And how would that pressure differ, if any, from the fact that the milk is turned upside down in the paper container?

A. The area is so small. That would be one factor.

The Master: Q. The area is so small in what?

A. If the milk bottle is turned upside down and the milk presses against the cap.

Q. In the glass bottle?

A. Yes. The paper cap is a very small area, as compared to one that is all milk. A milk bottle is not upside down very much or very long.

Mr. Gariepy: Q. Is there any reason to believe that either bottle would be upside down, one more than the other, the paper or glass?

1938 A. I don't think so.

Q. You stated on direct examination concerning the matter of filtered air coming into the plant.

A. Yes.

Q. The paper board plant.

A. Yes.

Q. Do you know anything about the air at the Cherry River Paper Company?

A. No, sir, I do not.

Q. Would you expect to find air with considerable bacteria in it in that mountainous country?

A. Yes, sir.

Q. You would?

A. Yes, sir.

Q. You never were there?

A. No.

Q. What kind of bacteria would you expect to find in the air coming through at the Cherry River Paper Company mill here at Richmond?

A. I can only speak from experience. I have not been there. But I have had experience in bacterial work in mountain atmosphere. I worked with Professor Zunts at Brussels. I went with Professor Zunts on an expedition to Switzerland, where he was studying certain factors of the air in various altitudes. I was studying the bacteria of the air in those altitudes, and I know it does not differ

much from the bacteria in the air at sea level altitude.
1939 It depends upon the wind and how it whips up bacteria from the soil, from the mountain sides. There may be even more bacteria on a windy mountain side than you find on a plain, where there is less violent wind.

Q. Would you expect to find that same problem with regard to the health hazard in the event that a dairy bottling milk in glass was located in the mountains?

A. Surely.

Q. The same thing?

A. Yes.

Q. There would not be any difference?

A. No.

Q. There wouldn't be any difference?

A. No.

Q. Do these dairies have filters that filter the air in there?

A. No.

Q. Then the air comes through the door and goes over the top of the bottles and over the washing and the rest of it without being filtered?

A. It is not blown through under pressure, as it is in the cooling and artificial ventilation in the other case. There you have a tremendous pressure blowing the air in, to bring out the humidified air, to dry the sheet. It is part of the drying of the sheet of paper being formed.

Q. This bacteria would be expected to be coming in on dust, wouldn't it?

A. Yes.

1940 Q. And this dust would appear on the surface of the paper board, wouldn't it?

A. If it were dust, yes.

Q. Did you ever observe any such condition in Detroit at the Risdon Dairy?

A. I did not examine it from that viewpoint, no.

The Master: I would like to ask a question there that occurs to me.

Q. In the case of the caps of ordinary glass milk bottles, I notice when the cap is taken out of the bottle there is a film of cream attached to the underside of it?

A. Yes.

Q. Does that make any difference in connection with the traveling of bacteria?

A. I don't know, Master. I don't know what influence that would have.

Q. Would you say that bacteria on the inner wall or on the inside of the wall of a paper carton get into the body of the milk or just remain along the sides of the container, where the milk happens to be touching the walls of the container?

A. You mean the bacteria are beneath the paraffin, in the paraffin, or on top of the paraffin?

1941 Q. What I have in mind is this. When you pour milk out, there is a thin film of milk which adheres to the sides of the bottle?

A. Yes.

Q. Now, do the bacteria travel beyond the point where the milk is touching the walls of the container, or do the bacteria go right on into the middle of the milk?

A. Right on into the middle of the milk. They are disseminated.

Q. They do not just stop?

A. Oh no.

Mr. Gariepy: Doctor, we were discussing this morning this matter of bacteria and disease emanating or being traced to glass bottles. Are you acquainted with the article by Armstrong and Parran, published in United States Public Health Service Bulletin in 1927, regarding outbreaks of disease being traced to glass milk bottles?

A. No, sir. I do not recall that article.

Q. Do you know those men?

A. What are the initials?

Q. Armstrong and R. Parran.

The Master: What are Armstrong's initials?

Mr. Gariepy: I haven't got his initials, but it is Thomas Parran instead of R.

1942 Q. Do you know Thomas Parran?

A. Oh, he is the present surgeon general.

Q. Yes.

A. And I think I know Armstrong, too. He is the bacteriologist in the—

Q. But you don't know about this article?

A. I do not recall the article, no, sir.

Q. Doctor, how much lead would be necessary to be taken in daily through milk by a child, what quantity, to present a health problem there?

A. I could not answer that offhand.

Q. Now, with regard to the respiratory secretions that you mentioned upon the paper board, you said they did not dry. Do I understand you to mean that they do not dry out at all?

A. Oh, they dry out, but very slowly.

Q. That is it.

A. Yes, sir.

Q. They still die out, don't they?

A. In time, yes, sir.

Q. Did you ever make any tests on paper board concerning these secretions?

A. No, sir.

Q. Did you ever see any employees in a paper milk bottle plant giving off nasal discharge or coughing upon the containers?

A. I do not recall having seen it, no, sir.

1943 Q. That same health hazard is present in a glass bottle plant, is it not?

A. Yes, sir.

Q. And both possibilities or probabilities depend upon the number of employees?

A. No.

Q. The more people employed about, the more opportunity or chance for these secretions to exist?

A. That would be a factor, yes.

Q. This ink offset, Doctor, can you not determine that ink offset at the dairy itself, when the inspector goes there and looks after the paper board and the material that they are using to contain the milk?

A. Oh, there are so many different types of containers. Some of them are paraffined and completely fabricated and I do not see how you could possibly reach one in a machine going 130 or 140 fillings a minute. I don't see how you could expect them to see that there are any offsets.

Q. There is not any reason why an inspector going into a paper bottling plant cannot pick up the blanks as the operator is standing at the machine, and look at them from time to time, and see the amount of offset, and criticise it, is there?

A. No. The offset will not be uniform. Offset

1944 is an accident.

Q. My question is whether an inspector could not see or observe such a condition?

A. No.

Q. Why?

A. Because there are two milk bottles in common use that are fabricated and paraffined in the plant. You cannot see the offset in those.

Q. You can secure containers from time to time, if you want to inspect them. Samples are sent to Dr. Prucha here and Dr. Orvis in Evanston; you could do that and inspect them, couldn't you?

A. You could inspect those, yes, but you wouldn't know what the next bottle would be.

Q. And you could secure any amount on request, telling them you wanted to inspect their containers, from time to time?

A. And they could send you any containers they desired you to inspect.

Q. Is there any reason why the inspector could not go to the plant and say, "I want to look at the containers here. These containers have too much offset."?

A. No.

Q. There is no reason why they could not do it?

A. No.

Q. And if they thought that amount of offset
1945 might poison children, they could make that complaint, couldn't they?

A. Yes.

Q. And they could stop the offset just as they could stop a dairy whose bacteria count was too high?

A. Yes.

Q. Do you consider these public health officials of cities that use single service containers, for instance, Philadelphia and New York City and San Francisco, possessed of sufficient bacteriological control over the paper milk bottle to protect public health in those cities?

Mr. Schaefer: That is objected to.

Mr. Gariepy: He is a public health expert, Master.

The Master: Q. Have you studied it?

A. Sir?

Q. Have you studied the situations there?

A. No, I am not familiar with the bottles they use, or the conditions or anything about it.

Mr. Gariepy: Q. You don't know whether they have control or not?

A. No, I do not.

Q. If I told you that no disease has emanated or even been traced to the single service container in the cities that have been using them for the past several years, would you say that had sufficient bacteriological con-
1946 trol over the container?

A. No, I would not.

Q. Why?

A. Because I do not think you know whether there has been any disease transmitted by a single service container.

Q. Can't they trace that, as well as they can trace it to the glass bottle?

A. No.

Q. They cannot do it?

A. No.

Q. Why not?

A. Because the single service containers are not uniform.

Q. Are the bottles uniform?

A. Much more uniform.

Q. But they are not uniform?

A. No, they are not uniform, but they are under your inspection and you can wash them and clean them to suit yourself. If they are not cleaned and properly disinfected, then the enforcing officer is to blame.

The Master: Q. You are talking about glass bottles?

A. I am talking about glass bottles, yes. On the paper bottle, he has not any control over it.

Mr. Gariepy: Q. He has the rinse test, hasn't he?

A. Yes.

Q. And that is the only test you have on the glass, outside of the inspection?

A. The glass is impermeable.

1947 Q. And you have the disintegration test on the board, which you yourself said this morning you performed?

A. Yes, and I will give you the information on that particular container, and the sample used from that particular container, but it will differ from one container to another, and it will even differ in the same container.

Q. As I understood your direct examination, one of the advantages of the use of the single service container that you recommended to Dr. Bundesen was its use in hospitals?

A. Yes.

Q. Do I understand you to say that even though it has an advantage by being in the hospital, that you would recommend it, even though you do not have control to detect the quality of the board and the sanitary aspects of the container?

A. When I made that recommendation, I did not know the container was porous. I was not aware of that fact.

The Master: Q. That is the only thing?

A. That is the principal thing, Master.

Mr. Gariepy: Q. You said on direct examination, in answer to Mr. Schaefer's question, that all of the dairy equipment, in your opinion, from a public health standpoint, had to be of smooth, impervious surfaces, is
1948 that right?

A. For Grade A milk, yes.

Q. And that is because of the fact that it is being used over and over again, and you want to keep the surfaces clean?

A. Yes.

Q. That does not apply to a single service paper milk bottle then, does it?

A. Yes. We should be able to clean it, or else it should be sterile, or we should be able to disinfect it and convince ourselves that it was clean and harmless.

Q. What would convince you, Doctor?

A. An impermeable surface that I could clean in a dairy, like they clean glass.

Q. Then it would have to be made out of glass; that would be the only thing?

A. No.

Q. What would it be made out of, if it was not made out of glass?

A. It would be made of impermeable material, instead of paraffin.

Q. Name it.

A. Artificial resin.

Q. Do you know of any milk bottles that are being made today out of artificial resin?

A. No. There are caps being made out of it.

1949 Q. Bottles being made out of it?

A. No, no bottles.

Q. Doctor, you testified that you compiled or just assembled this material of George Scott's or of Ex-Cell-O, and you did that just to make out a preliminary report.

Why did you go to Geneva to get an additional check on the paper board from Breed & Sanborn, if you were just going to compile this material?

A. I wanted the material up to date. I wanted to get all the information I could from those two men about the board.

Q. Is that the same reason why you went to the Risdon Dairy, then, to get it up to date?

A. Yes, I wanted to have some first-hand information. I have never seen the Pure-Pak container.

Q. Then it was not just to compile the stuff, but it was to get the last word there was concerning the sanitary aspects and the public health aspects of the single service container in actual operation at the Risdon Dairy, is that it?

A. Yes, from my observation, yes.

Q. And at the Ex-Cell-O Machine Company's plant, where you saw it in operation?

A. Yes.

1950 Q. And the quality of the board as it was actually advanced and used in every day practice in the making of paper milk bottles at Geneva?

A. Yes, sir.

Q. That is right?

A. Yes, sir.

The Master: Q. You say that paraffin is not impermeable?

A. The paraffin container cannot be made impermeable by treating with paraffin.

Q. That is, the bacteria can go through the paraffin coating?

A. Yes, sir. The milk can go through the coating into the board and the bacteria can come from within the board or on the board into the milk.

Mr. Gariepy: Q. Doctor, you testified on cross-examination concerning certain paper containers that were sent to you by Ex-Cell-O or George Scott. Which one sent them, the company or George Scott personally?

A. I do not recall.

Q. And how many did he send you, in 1938?

A. There were one or two packages. I think they either had six or twelve complete empty sealed containers to the package. They came to my home, at 5844 Stony Island.

Q. What month was that, Doctor, if you can remember?

A. I do not remember. It was early in 1938, I think.

Q. How did you happen to get these containers
1951 early in 1938, when you were through making this report, Plaintiff's Exhibit 4 here?

A. I don't remember. I did not know what they were for. They sat around for a month at home before I opened them.

Q. You did not have any communication from him?

A. No, sir.

Q. That he was sending them, or you requested them?

A. No, I did not have any communication from him at all.

Q. Was that before February 7, 1938? Early in the year, I think you said.

A. It was early in the year, yes. I don't know whether it was that time or not. It was early in the year, within the first three months. Now, I do not know the date.

Mr. Gariepy: Mr. Golding, will you mark this Exhibit 87 for identification?

(The document referred to was thereupon marked by the reporter Plaintiff's Exhibit 87 for identification.)

Mr. Gariepy: Q. Doctor, will you look at Plaintiff's Exhibit 87 and see if it will help to refresh your memory as to when you got these containers?

A. No, sir, it does not.

Q. That is your letter to George D. Scott?

1952 A. Yes.

Q. Dated February 7, 1938?

A. Yes, sir.

Q. But whether it was that month or three months afterwards, you cannot tell?

A. I do not associate that with the letter at all, sir.

Q. Why did you request George D. Scott to return this report to you, Doctor?

A. I didn't have a copy. I haven't got a copy of it at all. I did not have a copy. I returned it to him and there was no copy available.

The Master: Q. How many did you prepare originally?

A. One copy.

Q. Didn't you leave one with Dr. Bundesen?

A. I gave the original copy to Dr. Bundesen.

Q. And then the copy you gave to Mr. Scott?

A. Mr. Scott did not have a copy. I only made one copy, and that I gave to Dr. Bundesen.

Q. You mean you made an original and a copy, or just an original?

A. Just an original, with no carbons at all.

Q. And you gave that to Dr. Bundesen?

A. I gave that to Dr. Bundesen.

Q. And he returned it to you?

A. I got it from Dr. Bundesen for Mr. Scott to take to Washington, to see Dr. Parran, and I had requested
1953 Mr. Scott to return it in that letter.

Mr. Gariepy: Q. Was this date, February 7th, 1938, subsequent to your appointment to membership on the Board of Health, or before?

A. No, I was appointed in December 1938.

Q. Two months later?

Mr. Schaefer: Oh no.

The Witness: A. December. That is in February.

Mr. Gariepy: Q. December. This was ten months previous to that?

A. Yes.

Q. Why did you ask him to return the report, Doctor, for which report he paid you $250 to prepare?

A. It was addressed to Dr. Bundesen. I wanted to give it back to Dr. Bundesen. I asked Dr. Bundesen if I could not take it. I should have made a copy of it then, but I did not.

Q. Don't you know how it got back to George D. Scott's possession?

A. I gave it to him.

Q. You gave it to him?

A. Yes, I gave it to him to take to Washington to show to Dr. Tom Parran.

Q. Did you, on February 7, 1938, believe this report to be a true and honest representation concerning the merits of the single service container?

A. Yes.

1954 Q. The purpose of seeing Breed & Sanborn and Dr. Vaughn and the Risdon Dairies there was to bring yourself up to date, that is right, is it not?

A. To bring me up to date. I know nothing about the Pure-Pak container. It was not to bring me up to date. It was getting some original first-hand information.

Q. What have you done with regard to seeing other public health officials of cities and villages and bacteriologists in these cities and villages using the single service container, since that time?

A. I have not seen them at all.

Q. Would you consider the same rule of conduct to be necessary and the same type of investigation to be necessary to bring you up to date on the thing now?

A. No, I don't think so. I have more information on it now.

Q. That is what you got, you testified to, in the spring of 1938?

A. Yes, sir.

Q. Have you read the articles published by Dr. Prucha and Dr. Paul Tracy concerning the sanitary aspects of the milk bottle?

A. I think I have read all of their publications.

Q. Do you consider those articles as accurately representing the merits of said container?

1955 Mr. Schaefer: Now, that is objected to.

Mr. Gariepy: He is a public health official.

The Master: Are they in evidence?

Mr. Gariepy: Yes. Mr. Schaefer brought out two of Dr. Prucha's reports, one at Louisville and one at another place.

Mr. Schaefer: I don't believe they are in evidence.

Mr. Gariepy: I think you offered them both.

Mr. Schaefer: I think not.

Mr. Gariepy: Q. Well, you read them, did you, Doctor?

A. Yes, sir.

Q. And you are acquainted with the contents of them?

A. Yes.

Q. Do you think they accurately represent the merits, from a public health standpoint, of the single service container?

A. No.

Mr. Schaefer: That is objected to.

Mr. Gariepy: Q. They do not?

A. No.

The Master: He says no.

Mr. Gariepy: Q. Wherein are they false and misleading?

The Master: I think those documents, not being in evidence, do not afford much help to the Court, in determining just what this witness is talking about. That is all a matter of argument. We have all of the

1956 evidence in the record now on both sides and you are just going to go over the whole thing again. I don't know whether it is going to do any good here to question

this witness in what respects he disagrees with those articles. We have the respective contentions in the record now.

Mr. Gariepy: I am just asking what his opinion is as a public health expert.

The Master: He has already testified or he has already told you that he does not agree with it, and now you are going to have him repeat everything he has said up to today.

Mr. Gariepy: No, I don't want him to repeat. I just want to know whether they are false and misleading.

The Master: No, it is just going over the whole thing again. I will sustain the objection.

Mr. Gariepy: Q. Doctor, let us get back to this matter of spicules of paraffin that you mentioned. You mean by spicules, needle-pointed objects, is that correct?

A. Yes.

Q. And that is Webster's dictionary definition of a spicule, is it not?

A. Yes.

Q. When milk is fed to infants, I understood you to say it is generally heated?

1957 A. According to the age of the child.

Q. For the child under one year?

A. Usually, yes.

Q. Would not the needle-point character of this particle of paraffin, this spicule character of it, the melted away?

A. Yes, sir.

Q. Then the dangers from the spicule would be removed by the heating process?

A. It would still be a piece of paraffin.

Q. But it would be removed in the heating process; it would be melted down, dissolved, isn't that so?

The Master: He said that the paraffin would still be there, although the point might not be.

Mr. Gariepy: Q. And that spicule character being dissolved away, the degree of irritation that you said would exist from it getting into the intestinal tract would be lessened somewhat, wouldn't it?

A. I don't think so, no.

Q. It would be just as much as though the spicule was a round particle?

A. In the intestinal tract it would not be as hard as it is outside, in the air, and I do not think it would have the

hazard of puncturing the intestinal tract, but it would be a foreign body in the intestinal tract.

1958 Q. You know that mineral oils are used in the intestinal tract, don't you, and prescribed by physicians?

A. At times, yes, and under certain conditions.

Q. Do any of these mineral oils contain any of the component parts of paraffin?

A. They contain very similar products to paraffin.

Q. The mineral oils are suggested because of the fact they are easier on the intestinal tract, and cause less wear and tear, is that right?

A. No, I wouldn't say that.

Q. Why?

A. Because that isn't true. You give mineral oils for a certain purpose. You use several types of cathartics. Mineral oil is one of them. It depends on what you want done. It depends on the patient, the disease, the age, as to what you want to do.

Q. Is not mineral oil prescribed after operations at a hospital, say, at the Cook County Hospital here?

A. I suppose it is, at times.

Q. Do you know that as a fact?

A. No, I do not know that as a fact.

Q. Would you be surprised if I told you so?

A. No, I would not.

The Master: Q. Do they give mineral oil to children under one year of age?

A. At times, yes. If they are constipated.

1959 Mr. Gariepy: Q. Will you point out to the Master with a piece of paper and a pencil how big a milligram of the spicule of that paraffin would be, Doctor?

A. It would depend on the thickness of it.

Q. What size thickness did you have in mind when you testified on direct that it might be injurious to infants, in the intestinal tract, or to a senile person?

A. I would say a mass containing several milligrams of paraffin. It would be, I suppose—

The Master: Q. The size of a pinhead?

A. Oh, I suppose half as big as a pea, something of that kind. It varies, though, in size and in shape.

Mr. Gariepy: Q. Now, with regard to babies' milk, Doctor, is it not a fact that evaporated milk is most commonly used in feeding babies?

A. It is commonly used.

Q. And in that evaporated milk there is none of this health hazard of spicules of paraffin, is there?

A. I should not think so.

Q. Now, Doctor, did you, in any of your observations ever see any harmful amount of bacteria in the felts in a paper mill?

A. You mean harmful?

Q. Yes.

A. Yes.

1960 Q. Where?

A. At Sealrite. A large number of bacteria are suspicious, any time you see a large number. There was no disease producing bacteria detected, but there was a high bacterial flora in the felts.

Q. Is this Fulton plant of Sealrite located in the city or in the country?

A. It is located in Fulton, New York.

Q. Is that a small suburb or a highly intensified industrial district?

A. It is a highly intensified industrial district, of, I would say, twenty-five to fifty thousand people.

Q. Did you observe the quality of air that came through the factory there where they are making these containers?

A. Yes.

Q. What quality of air is there?

A. It is just ordinary air, that will bear bacteria, depending upon the wind and meteorological conditions.

Q. Is that filtered air in there?

A. They are filtering it, yes. They began filtering it a few months ago.

Q. Is it not a fact that most of these paper mills are located in the country and out of city districts, so that they can be near their source of raw material?

1961 A. I am not familiar with that.

Q. You don't know?

A. No.

Q. Doctor, this milk that babies take, under one year, cow's milk, not evaporated milk, is usually fed to the baby in a bottle, is it not?

A. Yes, sir.

Q. And the bottle has a nipple on it?

A. Yes, sir.

Q. Is the spicule big enough to go through the hole of that nipple?

A. I think it would be. It could be, yes. It could be too large to go through or it could be small enough to go through.

Q. If it is too large to go through, when she takes off the nipple through the nursing hour, she shakes the bottle out and sterilizes it in the kitchen, as they usually do, dumps it outside and out goes the spicule?

A. Yes.

Mr. Gariepy: That is all.

Mr. Schaefer: One or two questions.

1962 *Redirect Examination by Mr. Schaefer.*

Q. With respect to Dr. Prucha's experiments concerning the self-purification of paper, I understand that you do not question the result of Dr. Prucha's work, but you question the interpretation of that result, is that correct?

A. Yes, sir.

Q. You testified that you advised Dr. Bundesen of the fact that the work which you have done subsequent to the preparation of Plaintiff's Exhibit 4 had caused you to conclude that the paraffin paper container was not satisfactory from a public health point of view. Did you advise anyone else of that fact?

A. Yes, I did.

Q. Who did you advise?

A. I advised Mr. Skinner, the president of Sealrite.

Q. Who else?

A. I advised Mr. Scott, of Ex-Cell-O.

Q. When did you advise Mr. Scott of the Ex-Cell-O Corporation?

A. I think it was in October 1938.

Mr. Schaefer: That is all, Doctor.

1963 *Recross Examination by Mr. Gariepy:*

Q. Doctor, Mr. Schaefer asked you about Dr. Prucha's experiment on the self-purification of paper?

A. Yes, sir.

Q. I show you Plaintiff's Exhibit 46, which purports to be the exhibit dealing with that subject. Those tests, in your opinion, are accurate, are they?

A. Yes, sir.

Q. What interpretation do you place on those tests?

A. I place this interpretation on these tests: After he dipped the plaque, which was two and a half by four and one-half inches, into his bacterial suspension of B-prodigiosis of this concentration, and immediately disintegrated it, he had a seeding on the plaque on the average of 14,000 bacteria. After thirty minutes of repeating that technique and allowing it to dry for thirty minutes, he had 450 bacteria. After sixty minutes and on to twenty-four hours he had fewer bacteria, and in sixty minutes three and two hours zero, and on down. I interpret that at this point—

Mr. Schaefer: What point?

A. At the point of inoculation or immediately after the plaques were dipped into the bacteria suspension, disintegrated, he had moisture on the surface.

1964 Mr. Gariepy: Q. Referring to what?

A. Column 1. He had moisture on the surface, with bacteria on. After thirty minutes there had been sufficient absorption into the paper board and particularly into the edges of the board that are not calendered, as well as through the calendering—there is ten times the rapidity of absorption through the uncalendered edge as there is through the dense, hard shell of the calendered surface. At the end of sixty minutes the fibers had absorbed all the water, and there was nothing definite on the surface for the bacteria.

These bacteria B-prodigiosis, are used very frequently by bacteriologists, because they form red colonies, and you can detect them without much technical difficulty. They will grow rapidly day after day in this artificial medium in the laboratory. They are in a very susceptible state. They have been cultured under ideal conditions and they react more violently to adverse physical chemical conditions than with hardier bacteria that had to survive pus, feces, and so on and so forth.

I think from those two standpoints, lack of hardiness of the organisms, but mainly due to the dehydration of
1965 the bacteria, by the water hunger of the cellulose fibers in the board, that that explains the results.

Mr. Gariepy: Q. Doctor, is it not a fact that the wetter the board the more the dehydrating process?

A. No.

Q. No.

A. No. Dehydration from the surface into the board means a water hunger or a deficit of water in the board.

If you have plenty of water in the board, it will not take water from the surface.

Mr. Gariepy: That is all, Doctor.

The Witness: Is that all?

Mr. Schaefer: That is all, sir.

The Master: I want to ask a question along that line.

Q. For instance, there is water inside the board. Isn't that going to dry out some way?

A. No, sir. It is hard to dry it out, because the atmosphere contains more water than is contained in the board, so the board tends to take up water, instead of giving it out. The fibers have a tremendous water hunger.

Q. Then I understand you to say that if there is water once inside the board, it stays there?

A. Yes, sir. If you make board with 8 per cent or 9 per cent water, it will hold that amount of water. It will
1966 not reduce it down to 5. The whole drying operation, which is the most expensive in the paper mill, is for the purpose of getting rid of water artificially, by heat and pressure, to dehydrate the board.

Q. Then you would say after it has been dehydrated down to about 9 per cent, it does not dehydrate after that, when it gets into ordinary room temperature?

A. No. It will tend the opposite way. It will tend to pick it up.

Q. Then you say there is no self-drying of the board?

A. No. It has too great a water hunger.

Mr. Gariepy: Q. Is that just a fiction or pet phrase, would you say, of Dr. Prucha's, or is it just unheard of?

A. What?

Q. This self-drying paper board?

A. No. Simply a different terminology. Dr. Prucha, I understood, calls it self-disinfection.

Q. Self-purification of paper board?

A. Yes.

Q. There is no such thing that you know of, is that right?

A. I wouldn't call it that. I would call it the dehydration of bacteria on the surface, due to water absorption onto the board.

Q. But the water does not purify itself, in time?

1967 A. I don't think it does in that sense, at all.

Q. In what sense does it dry itself?

A. Any bacteria placed on the surface, under ordinary

conditions are placed on the surface suspended in something, in contact with something. Now, it is simply a matter of how tenacious that medium is as compared to the water hunger of the board. In time I think the bacteria will disappear from the surface.

The Master: Q. The bacteria will disappear from the surface?

A. But it would take weeks and months, as compared with the minutes in Dr. Prucha's experiments.

Mr. Gariepy: Q. And your experiments showed it took many weeks or months?

A. I did not test it through.

Mr. Gariepy: That is all, Doctor.

(Witness excused.)

Mr. Schaefer: Mr. Golding, will you mark these Defendants' Exhibits 24, 25, 26 and 27?

(The documents referred to were thereupon marked by the reporter Defendants' Exhibits 24, 25, 26 and 27, respectively, for identification.)

Mr. Schaefer: If the Master please, I now offer in 1968 evidence Defendants' Exhibit 24 for identification, which is a copy of the ordinance and regulations of the City of Chicago and of the Board of Health of the city, pertaining to the production, processing and distribution of milk and milk products.

I also offer Defendants' Exhibit 25, which is a copy of a regulation adopted by the Board of Health on August 6, 1935, concerning the type of milk and cream to be used in the manufacture of butter to be sold in the City of Chicago, and, in substance, requires that the butter be made from cream coming from tuberculin tested cows.

I also offer Defendants' Exhibit 26, which is a copy of a regulation adopted by the Board of Health on November 12, 1935, which is the one to which I alluded previously, requiring that all milk and milk products be served and dispensed to the final consumer only in the original unopened container, as received from the distributor.

I also offer Defendants' Exhibit 27, which is a copy of a resolution adopted by the Board of Health or published by the Board of Health on July 18, 1939, pertaining to the use of the standard nutrient agar prescribed in the sixth edition of the American Public Health Association 1969 Standard Methods of Milk Analysis.

The Master: They may be received.

(Said documents, as above described, so offered and received in evidence, were marked DEFENDANTS' EXHIBITS 24, 25, 26 and 27, and are attached hereto and made a part hereof.)

The Master: Anything further?

Mr. Schaefer: Off the record, please.

(Discussion off the record.)

Mr. Schaefer: If the Master please, I offer in evidence as Defendants' Exhibit 28, a stipulation regarding certain tests to be performed in connection with this case and a copy of the procedures to be employed in following those tests, the original of which is on file in the files of this case, filed June 29, 1939.

The Master: It may be received.

(Said stipulation so offered and received in evidence was marked DEFENDANTS' EXHIBIT 28, and is attached hereto and made a part hereof.)

Mr. Schaefer: Now, if the Master please, I believe there are some of the Defendants' Exhibits which may not have been offered. I have not had an opportunity to check that. I would like now to reoffer all of the Defendants' Exhibits numbering from 1 to 28.

1970 Mr. Gariepy: That puts us on the spot.

The Master: Off the record.

(Discussion off the record.)

The Master: Outside of that do you rest?

Mr. Schaefer: Outside of the fact that I have not yet checked over the exhibits or the record with regard to the exhibits, and outside of the fact that I have not yet prepared objections to the depositions, we rest, yes, sir. I would like to have time to do that checking, however.

The Master: Let the record show that this hearing is adjourned to 2 o'clock P. M. on October 19th.

Whereupon the hearing of the above entitled cause was continued to 2 o'clock P. M. Thursday, October 19, 1939.

1971 • • (Caption) • •

Monday, October 23, 1939,
2:00 o'clock p. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, on behalf of plaintiff.
Mr. Schaefer, Mr. Horan, on behalf of defendants.

1972 The Master: You may proceed.

Mr. Schaefer: I am calling Doctor Bundesen.

Mr. Gariepy: If the Master please, if the reports concerning the nature of this hearing are correct, I now move that the other witnesses, other than the witness who is about to testify, be excluded, and I am referring to other members of the Board of Health of the City of Chicago, and that they be called in the order that they are testifying.

Mr. Schaefer: I have no objection to that, but I do not see the others here.

Mr. Gariepy: Is Doctor Dulak here?

Mr. Horan: No, not in the room.

Mr. Gariepy: They are all in the other room, I understand. All right, thank you.

HERMAN N. BUNDESEN, was called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. Will you state your name, please, Doctor?

A. Bundesen, B-u-n-d-e-s-e-n, Herman Bundesen.

Q. And where do you live, Doctor?

A. 7410 Oglesby avenue, Chicago.

1973 Q. And your occupation?

A. President of the Chicago Board of Health.

Q. How long have you been president of the Board of Health of the City of Chicago?

A. I was first appointed February 1st, 1922, and then served until November, 1927, and then I was again reappointed in March of 1931, up to the present time. How-

ever, during the early years I was Commissioner of Health, and then the Supreme Court ruled that the job of Commissioner of Health was illegal, in the 302nd Illinois, and then the position of president of the Board of Health was created, and I have been president only since the latter part of 1926, I think it is, or 1925.

Q. During the entire period you have been in charge in one capacity or other, of the administrative and technical departments of the Board of Health of the City of Chicago?

A. Since the Board of Health was appointed, under the direction of the Board of Health, yes, sir.

Q. Now, doctor, during the time that you have been president of the Board of Health of the City of Chicago have you had occasion to consider the question of the use of paper containers for the distribution of fresh fluid milk in the city?

1974 A. Application has come before me for permission to use paper containers, yes.

Q. Do you remember when that was, doctor?

A. No, I would not. The records in the Health Department would show all that. It is quite some years ago. I would not know just how long ago that would be. With so many activities I cannot remember.

Q. Since the time when the application was first made have you devoted any time to the consideration of the public health problems, if any, involved in the use of paper containers for the distribution of fresh fluid milk?

A. Well, personally I have not devoted much time to the technical details, but I have referred to the various technical people in the department the matters regarding paper containers and have referred to them the applications and have looked to them for the looking up of the records and making what necessary investigation there was regarding the use of paper containers.

Q. Doctor, in your opinion, is the kind of material used in the manufacture of paper containers a matter of public health significance?

A. Yes, I think it is.

Q. And in your opinion is the kind of board used in a paper mill manufacturing paper board for use in milk

1975 containers of any public health significance?

A. Yes, I think it might be.

Q. And in your opinion, doctor, are the sanitary conditions in a plant where paper board is cut, formed and

printed for use in paper milk containers matters of public health significance?

A. Yes, I think they would be.

Q. In your opinion is the bactericidal effect, if any, of the application of paraffin to paper used in paper milk containers a matter of public health significance?

A. I don't know enough about the technical subject to qualify as an expert on that. I would have to take the advice of our technical men, as I have in the past, on the Board of Health.

Q. In your opinion is the fact that paraffined paper milk containers are uniformly absorbent a matter of public health significance?

A. I do not know that they are uniformly absorbent, and if they were uniformly absorbent—

Q. Assuming they are uniformly absorbent, Doctor, in your opinion is that a matter of public health significance?

A. Yes, it might be.

Q. Will you assume, Doctor, for the purpose of this next question, that undissolved paraffin from paper con-
1976 tainers gets into the milk placed in those containers, in quantities varying from one milligram per quart to as high as one hundred and seven milligrams per quart; is that a matter of any public health significance, in your opinion?

A. I would not know the effect of paraffin on the intestinal tract to testify to that as an expert. I know there are many foods that do have paraffin containers and that we do not consider those a health hazard. As to what effect it might have on the intestinal tract, if you are referring to children, a pediatrician would have to testify to that. I would not be able to give the answer on that. I don't know enough about the effect of paraffin, except that in adults I know of no harm that paraffin would do if an adult swallowed some paraffin, if he did not have any pathological condition in the intestinal tract. That is really a medical matter that I would not be competent to answer you intelligently on.

Q. Now, Doctor, as of February 2, 1939, what opinion, if any, did you have as to whether or not, from the point of view of public health, the use of paper containers should be permitted for the distribution of fresh fluid milk?

A. Well, I think that was answered pretty well by
1977 the Board of Health in a meeting of about May of this year, when the Board of Health went on record

regarding its attitude as to the use of paper containers, when they passed a resolution that it was the sense of the Board that the use of paper containers might be permitted without attendant hazards to the public health when the principles of certain regulations were carried out, and then the Board at that time passed certain definite regulations, and I think that is the attitude that I had, although I was not at that time a member of the Board of Health. Doctor Black was the acting president and I was on a leave of absence. That was the resolution that was presented by Doctor Arnold, I think. I think that is my attitude at the present time.

Mr. Schaefer: Now, if the Master please, I move to strike that answer as not responsive, and I would like to have the question read to Doctor Bundensen.

Mr. Gariepy: I submit that the answer is responsive.

The Master: Let the reporter read the question and also the answer.

(The record was read by the reporter as above recorded.)

Mr. Schaefer: The question deals as of February 2nd.

1978 The Master: February 2nd, yes. I think the answer may be stricken. Now read the question again.

(The question was again read by the reporter.)

Mr. Schaefer: Q. I am asking for your opinion, Doctor.

The Master: Q. At that time did you have any opinion on that question?

A. As to the use of what?

Q. Paper containers.

Mr. Gariepy: Of the single service container.

The Witness: A. My opinion has been consistently the same all the time, that paper containers, if they could be used with safety, I would have no objection to. Does that answer your question?

Mr. Schaefer: Q. What in your opinion are the factors that go to determine whether or not paper containers can be used with safety?

A. Those opinions expressed in the meeting of the Board of Health, which covered that point very well, which have just been read, of this May meeting; that the use of paper containers—

Mr. Schaefer: I will have to move to strike that, Master.

The Master: Yes.

Mr. Schaefer: Doctor, please pay attention to the 1979 question, when it is read.

The Master: Read the question.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: A. Those factors that were adopted—those factors as outlined by the requirements of the United States Public Health Service.

Mr. Schaefer: Q. And what are those, doctor?

A. I am not so very familiar with many of them. That the material should be non-porous, that there should be certain bacterial—whether there should be a certain temperature for the heating of the material that goes into the making up of the container.

Q. Any others, doctor?

A. I don't pay much attention to the details of those things. There is a large number of them, but I would not know what they were.

Q. When you say non-porous, with respect to paper containers, Doctor, do you mean non-absorbent?

A. Yes, non-absorbent.

Q. In your opinion should the use of paper containers which are absorbent be permitted for the distribution of fresh fluid milk in the city of Chicago?

A. I would be guided a good deal by the regulations of the United States Public Health Service on that, but 1980 I don't think that the United States Public Health Service permits them to be non-absorbent.

Q. Do you mean that last statement? Will you read that, Mr. Reporter?

The Master: There are two negatives there. Read the answer.

(The witness' last answer was read by the reporter as above recorded.)

The Witness: I do not think that the United States Public Health Service standards permit a container which is absorbent.

Mr. Schaefer: Mr. Golding, mark this Defendant's Exhibit 29 for identification, please.

(The document referred to was thereupon marked by the reporter Defendant's Exhibit 29, for identification.)

Mr. Schaefer: Q. Doctor, I show you a document which has been marked Defendants' Exhibit 29, for identification, which purports to be a resolution adopted by the Board of

Health of the City of Chicago. Will you examine that document and tell me what it is, please?

A. That is a resolution presented by me to the Board of Health, which makes the ordinance of the City of Chicago conform to the Government's ordinance.

1981 Q. I would suggest that you do not state what it does. That is really a matter for the lawyers to determine.

Mr. Gariepy: I suggest, counsel, that the document speaks for itself.

Mr. Schaefer: Q. Is that a resolution or a copy of a resolution which was adopted by the Board of Health?

A. Yes, sir. That is the resolution that I presented to the Board of Health, and it was adopted by the Board of Health.

Q. And on what date was that?

A. I think it was October 16th. It was last Monday.

Q. Now, attached to the resolution are copies of the suggested changes prepared by the United States Public Health Service, is that correct?

A. Yes, sir.

The Master: Suggested changes in what?

Mr. Schaefer: In the United States Public Health Service standard milk ordinance and code.

The Witness: They are changes in the Chicago code to conform to the United States Public Health Service code.

Mr. Schaefer: Q. Doctor, will you examine that document, the last six pages of that document, and tell me wherein the suggestions there made differ from the

1982 suggestions made by the United States Public Health Service Advisory Board in June of 1939, if at all?

A: I am not familiar enough to testify wherein they differ with the suggestions made by the Advisory Board, particularly in this Section 10 of the Code. One important point here, and, as I read it at the time, the one that changed it, to live up to our ordinance, is this statement in which it says "Milk and milk products sold and distributed in containers in quantities of less than one gallon shall be delivered in standard milk bottles," which is in the old ordinance, and this is in the new ordinance now; "Or in single service containers."

Q. Yes.

A. That is in this one here, "in single service containers."

Q. Yes.

A. Then—

Mr. Schaefer: Is there a question pending, Mr. Reporter?

Mr. Gariepy: He is answering your question.

Mr. Schaefer: Will you read my question?

(Mr. Schaefer's last question was read as follows: "Doctor, will you examine that document, the last six pages of that document, and tell me wherein the sug-
1983 gestions there made differ from the suggestions made by the United States Public Health Service Advisory Board in June of 1939, if at all?")

Mr. Schaefer: Q. Can you point out any particulars in which they differ, doctor?

A. Yes, sir. You mean, where the suggestions or where the recommendations of the Advisory Board differ?

Q. Yes, sir. From that material there.

A. Yes, sir.

The Master: What is the significance of this now?

Mr. Schaefer: I will withdraw that question.

Q. Doctor, at that meeting of the Board of Health on October 16th, 1939, who was present at the time of the presentation of this resolution?

Mr. Gariepy: I am going to object to that. The minutes of the Board of Health meeting at that time by the secretary of the Board are the best evidence of who was there and what took place, and not this doctor's idea about it.

The Master: Does the resolution say who was present?

Mr. Schaefer: No, sir.

Mr. Gariepy: They have got minutes.

The Master: Oh, I will let him state who was
1984 present. That is, the members of the Board.

The Witness: There were others present besides members of the Board.

The Master: Sir?

The Witness: There were others present besides the members of the Board, and the minutes would not show that.

The Master: Q. What members of the Board were present at this meeting?

A. All of the members of the Board. There were Doctor Black, Mr. Harry Reynolds, Doctor Francis Dulak and Doctor Lloyd Arnold, and myself. Those are the five members of the Board.

Q. Who else was present, Doctor?

A. Well, the acting—the man who was acting in the capacity of assistant to the president while the assistant to

the president was not there. That was Mr. Krueger and Mr. Guerin, and a number of newspaper boys. I don't recall whether anybody else was present. There were present during part of the meeting some milk dealers who were called in for certain infractions of the rules.

Q. Were they present at the time this resolution was considered?

A. No, sir.

1985 Q. They were not?

A. No, sir. You mean the newspaper boys, yes, sir. The newspaper boys were, but not the milk dealers that were called in.

Q. Those dairy people were not there?

A. No, sir. As I recall, there was no one else. Oh, yes, the secretary of the meeting, who takes down the minutes of all of these meetings.

Q. Who was that, doctor?

A. Madeline Wisa. I think that is everybody that was present.

Q. Doctor, you omitted one person who was there?

A. Have I? Oh, yes, and a very important person. The Assistant Corporation Counsel, Mr. Horan. I beg your pardon, Mr. Horan. I should not have done that.

Q. Now, doctor, is it the usual practice for the newspaper reporters to attend meetings of the Board?

Mr. Gariepy: I object to that.

The Master: Objection sustained.

Mr. Schaefer: Q. What significance, if any, Doctor, do you attach to the following statement contained in the recently adopted regulations of the United States Public Health Service pertaining to paper milk containers, and I am quoting from their regulations:

1986 "The porous condition of paraffin containers now available and the sloughing of particles of paraffin into the product are undesirable."

A. I think any statements that are made by the United States Public Health Service are of great significance and would have a great weight in influencing me.

Mr. Schaefer: Cross-examine.

Cross-Examination by Mr. Gariepy.

Q. Doctor Bundesen, have you been subpoenaed here today?

A. Yes, sir.

Q. And by whom were you subpoenaed?

Mr. Schaefer: It could be the President of the United States.

Mr. Gariepy: For the record I would like to show this. This is unusual. It comes in after the defendant has closed his case.

The Master: Go ahead and ask the question.

Mr. Gariepy: Q. Who subpoenaed you, Doctor?

A. All I know is that the boy came in and said he was from the Corporation Counsel's office of Chicago.

1987 Mr. Gariepy: Q. The Corporation Counsel is representing all of the defendants, including you and the Board of Health, in this litigation?

A. I don't think I am in this litigation. I don't think I am a part of this litigation.

Q. You are a member of the Board of Health?

A. Yes.

Q. And you are president at this time?

A. Yes,

Q. At the time this lawsuit was filed, on February 2nd, 1939, Doctor Robert Black occupied the office you occupy now as president of the Board of Health?

A. Yes.

Q. And you were on leave of absence at that time?

A. Yes.

Q. And you have supplanted him since?

A. Yes.

Q. And he is still a member of the Board of Health?

A. Yes, sir, as far as I know.

Q. Doctor, who dictates the policies with regard to the public health, of the Chicago Board of Health, in matters taking action to protect public health? Is there anybody that dictates policies or with whom the Board confers before taking any action to protect public health?

1988 Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: Q. Doctor, was the action taken by you and by the members of the Board of Health on October 16th, 1939, a free and voluntary action, that was taken at your suggestion?

A. I could not answer for the other members of the Board of Health. I can answer for myself. As far as I am concerned, it was—you say free and voluntary?

Q. Yes.

A. Yes, it was free and voluntary.

Q. Did you call the other members in to that session of the 16th?

A. I always do, yes, sir. That was a special meeting that we held.

Q. And was this matter of the resolution of October 16th, 1935, which counsel showed to you, discussed with the members of the Board of Health at that time?

A. Oh, yes, sir. You mean before it was passed?

Q. Yes.

A. Yes, sir.

Q. And Doctor Arnold was present at that time?

A. Yes.

Q. And is that the same Doctor Arnold who on May 15th, 1939, offered a resolution to the Board of Health concerning the use of single service containers in the city
1989 of Chicago?

Mr. Schaefer: That is objected to.

Mr. Gariepy: You opened the door on the May 15th meeting.

Mr. Schaefer: No, I did not.

The Master: I will sustain the objection. That was an unresponsive answer which that question adverted to.

Mr. Gariepy: All right, but he went into the actions of the Board of Health.

Q. What other action did the Board of Health take previous to October 16th, 1939 with regard to the recognition of the use of single service containers in the city of Chicago for the sale of fresh fluid milk?

A. Previous to when?

Q. October 16th, 1939. That was last Monday.

A. The Board of Health passed a resolution some time in May, 1939, regarding paper containers.

Q. If I asked you to name the date and suggested the 15th, would you say that was right or wrong?

Mr. Schaefer: That is objected to.

The Master: Is there any question about that?

Mr. Schaefer: I don't know what date that was.

Mr. Gariepy: Do you accept it?

1990 Mr. Schaefer: I don't know when the action was taken or if any action was taken.

Mr. Gariepy: Let us bring in the records then, counsel.

The Master: Let us not have all this colloquy. Proceed.

Mr. Gariepy: Mr. Golding, will you mark this Plaintiff's Exhibit 88?

(The document referred to was thereupon marked by the reporter Plaintiff's Exhibit 88, for identification.)

Mr. Gariepy: Q. Doctor, I show you a four page statement which I have had marked Plaintiff's Exhibit 88, and ask you to look over those four pages before I ask you another question with regard to the contents of those sheets.

A. Yes, sir.

Q. Do you recall the action taken, described in these four sheets, Plaintiff's Exhibit 88, on or about May 15th, 1939, by the Board of Health of the City of Chicago?

A. I was not a member of the Board of Health on May 15th, so I don't know what action was taken, except what I saw afterwards in the minutes of the Board of Health. I was not connected actively with the Board
1991 of Health on May 15th of this year, when that action was taken.

Q. Do you know that the action was taken, as described on Plaintiff's Exhibit 88 here, by the Board of Health, as shown in the minutes, on May 15th?

A. Yes, sir. The records of the Board of Health show that that action was taken.

Q. And was that resolution and that action taken on motion and suggestion of Doctor Lloyd Arnold?

A. The records would have to show that. My understanding is that it was, but I just got that from reading it over. I was not present at the meeting. You would have to consult the records.

Q. What activity or part did Mr. Charles Horan, the Assistant Corporation Counsel, who was present, take in the meeting held on October 16th, 1939?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Did you take any counsel with Mr. Horan with regard to this resolution that was passed on the 16th, that counsel showed to you, marked Defendants' Exhibit No. 29?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: You opened the door when you ad-
1992 mitted who was present, let him testify who was present, when I objected on the ground that the minutes were the best evidence of who was present.

The Master: I just let him go into who was present, and that is all.

Mr. Gariepy: Q. Did Doctor Lloyd Arnold vote at that meeting on October 16th, 1939?

A. No, he did not.

Q. He did not vote?

A. He did not vote. Each member was polled.

Q. And he was silent?

A. Each member voted yes, except Doctor Arnold, and for the purposes of the record he said he was passing his vote and not voting.

Q. I see.

A. But the president did vote.

Q. Now, counsel asked you concerning the significance of the last sheet of the United States Public Health Service suggestions, that part reading that "The porous condition of paraffin containers now available and the sloughing off of particles of paraffin into the product are undesirable." Have you ever heard of any health problem being created by reason of the sloughing off of particles of paraffin?

A. I don't even know that paraffin sloughts off.

1993 Q. Have you ever heard of any child or any aged person, Doctor, becoming sick or ill in any form, shape or manner with disease, by reason of drinking milk that had paraffin in it?

A. I don't practice medicine, so I would not know.

Q. No, I say, have you ever heard of such a thing occurring?

A. It is not a reportable condition to the Board of Health, so there would be no way that I could find out. Did you mean in the literature or in conversation with people?

Q. That is right. In literature, in articles, by referring to or by talking with other members of the Board of Health, where paper containers are used, have you ever heard of any such thing?

A. I do not recall a case.

Q. Have you ever heard of any baby becoming sick by reason of spicules of paraffin getting into the milk?

A. No. But that does not mean that there might not be something in the literature. I have never heard of it.

Q. You have never heard of it?

A. No, sir.

Q. Now, you said that you turned over a lot of this

1994 technical work in the matter of the single service container inquiry to others in the department. Who in the department did you refer to, Doctor?

A. Well, essentially Mr. Krueger, who is the chief sanitary officer in charge of all the milk activities, and Mr. Guerin, who is the Chief of the Bureau of Dairy Products of the City of Chicago. They are the two technical men who handle the matters of milk essentially.

Q. After you referred back to them concerning this application for the use of single service containers in the city, did you ever receive from either of these men a report concerning the advisability or the inadvisability of using these containers?

A. Both of these men were present and aided in the drawing up of this resolution.

Q. Of October 16th, 1939, is that the resolution you refer to?

Mr. Schaefer: I object to that on the ground it is incompetent testimony.

Mr. Gariepy: I will get to that in a minute. You may strike that.

The Master: The answer may be stricken.

Mr. Gariepy: Doctor, will you listen to the question I gave you a minute ago. Read it, Mr. Golding, please.

1995 (Mr. Gariepy's question, referred to, was read as follows: "After you referred back to them concerning this application for the use of single service containers in the city did you ever receive from either of these men a report concerning the advisability or inadvisability of using these containers?")

The Witness: A. Yes, sir.

Mr. Gariepy: Q. When?

A. Just before the resolution of October 16th was drawn up.

Q. In 1939?

A. Yes, sir.

Q. And in what form was that report from Mr. Guerin or Paul F. Kreuger, verbal or writing?

Mr. Schaefer: If the Master please, we are going far afield.

Mr. Gariepy: You opened the door.

The Master: I am just wondering what all this testimony is about.

Mr. Gariepy: I don't know what counsel is attempting to prove here.

The Master: But you sat there and did not object. He brought in a witness who does not profess to be an expert on the subject of bacteriology, and presented that
1996 question. You did not object. You let him introduce the evidence.

Mr. Gariepy: No. He asked him a lot of questions concerning absorption and paraffin.

The Master: And you did not object.

Mr. Gariepy: No. Let him do it. But if he asked him about those things I have a right to cross examine about the testimony he gave on direct.

The Master: I will let him answer whether he received a report.

Q. Was it in writing or orally?

Mr. Gariepy: Q. From Mr. Guerin or Paul Krueger.

A. The substance of it is in the resolution.

Q. Of October 16th, 1939?

A. Yes, sir. We discussed it and wrote up the resolution.

Q. Counsel asked you concerning the absorption of milk in a paper container. Do you know of any paper container that is being used as of this day that does not prevent any absorption of milk?

Mr. Schaefer: Does not what?

Mr. Gariepy: Q. Does not permit any absorption of milk.

A. I know nothing of the merits of any container at the present time, personally.

1997 Q. When did you first become informed, Doctor, that the United States Public Health Service had taken action with regard to the recognition of the single service container being permitted and recommended for use in cities?

A. When I saw an article in the newspaper to the effect that evidence had been submitted at this trial showing that single service containers or that the ordinance had been changed to permit the use of single service containers.

Q. And did you see the original action or the report from the United States Public Health Service at or about that time or immediately after you read this article in the paper?

A. You mean, the letters from the United States Public Health Service?

Q. Yes.

A. Yes, sir.

Mr. Gariepy: Mr. Golding, will you mark this Plaintiff's Exhibit 89?

(The document referred to was thereupon marked by the reporter Plaintiff's Exhibit 89 for identification.)

Mr. Gariepy: Q. Will you look at Plaintiff's Exhibit 89, Doctor, and tell me whether that is what you saw then?

1998 A. Yes, sir.

Q. Had you previously to that time written any letter to the United States Public Health Service making inquiries concerning their action on this subject of single service containers?

A. Such a letter was written under my signature and while I was out of town, yes, sir.

Q. And did you receive the reply when it came in?

A. No, sir.

Q. What happened to the reply to your letter when it came to your attention or came to the office there, rather?

A. The letter was written at the instigation of the Assistant Corporation Counsel, by Mr. Krueger, during my absence. When the letter came in Mr. Krueger went to my secretary and asked for the letter, saying that the Assistant Corporation Counsel was anxious to have the letter to present at a hearing, and if the letter had not come in they should wire for it. My secretary informed him that the letter had just come in and, as per my instructions, to forthwith turn over all correspondence to the Assistant Corporation Counsel regarding matters of milk at once, that letter was turned over to the Assistant Corporation Counsel for him to handle, because he was

1999 the originating source of that letter. That was about October 9th or 10th, I should say, somewhere in the neighborhood of October 9th or 10th, when the letter came in.

Q. And is that the reason for the conclusion that you did not learn of this action of the United States Public Health Service until you read it in the papers?

A. By this action you refer to that part of the ordinance which refers to the amendment permitting single service containers?

Q. Right, Doctor.

A. There are two sections. Yes, sir. That is not the answer to the second part of it.

Q. Has there been any effort made to you by anyone to rescind the action taken October 16th, 1939, with regard to suggestions for amendment of the ordinance?

A. No, sir.

Q. And that resolution and those suggestions are still in full force and effect in the Board of Health records, October 16th, 1939?

A. Subject to the approval of the Board of Health, yes.

Q. I don't understand. Subject to the approval of the Board of Health? I am referring in my question to the action taken by the Board of Health October
2000 16th, 1939.

A. Yes.

Q. That stands in full force and effect now, that resolution?

A. I had in mind this: We have a meeting and then we have minutes, and then the Board of the Board of Health at its next meeting approves as correct those minutes, if they conform to the ideas of the other members of the Board. It is correct as far as I am concerned, but the minutes would not be up for approval until the next meeting, and always those minutes are not approved.

Q. And subject to whatever suggestions or corrections in the minutes that may exist, they stand as approved?

A. If there are no corrections, yes, sir.

Q. Did Doctor Arnold make any other comment at this meeting of October 16th, 1939, other than passing his vote, saying he was not voting on it?

Mr. Schaefer: That is objected to.

The Master: Objection sustained.

Mr. Gariepy: Q. Do you know, Doctor, whether or not the model code and ordinance as suggested by the United States Public Health Service in the month of January, 1939 had any reference to the use of single service containers at that time?

2001 A. I did not get that.

Mr. Gariepy: Read it, Mr. Golding.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. I do not recall any model code and ordinance being submitted in January, 1939.

Mr. Gariepy: Q. No, as it existed, the ordinance and

code of the United States Public Health Service, in January, 1939, do you know whether or not there was any reference in that code and ordinance to the use of the single service container?

A. There were no definite standards regarding the use and manufacture of single service containers. There were no definite standards regardings the use and manufacture of single service containers at any time, until just within the past few weeks, when the Board of Health adopted this resolution. Previous to that time there had been no regulations by the United States Public Health Service concerning the use and manufacture of single service containers, and that is why I had not presented any standards to the Board of Health, until the Public Health Service had approved of it.

Q. Have you at any time since February 2, 1939
2002 changed your mind with reference to the use of single service containers for the sale of fresh fluid milk in the city?

A. No, sir. My attitude today is just as it has been consistently. I have never given permission for the use of single service containers. I don't think the Board of Health now has given permission for the use of single service containers and I have never been opposed to the use of single service containers, if they could be so made that fresh fluid milk could safely be served therefrom and that the standards came from the United States Public Health Service.

Q. As long as they complied with the standards and suggestions of that Public Health Service they were O. K. with you?

A. Yes, sir.

Q. Is it customary for an Assistant Corporation Counsel to attend all meetings of the Board of Health, Doctor?

A. Yes. I cannot recall a meeting where there has not been some Assistant Corporation Counsel present. Usually we have two.

Q. Is it customary for the Board of Health of the City of Chicago, of which you are president, previous to taking any action in matters of public health to dis-
2003 cuss the matter with the Corporation Counsel?

Mr. Schaefer: That is objected to.

The Master: I will sustain the objection.

Mr. Gariepy: Q. Do you know anything about the present action of the Board of Health concerning bringing the Mayor Kelly Milk Ordinance up to date?

The Master: Read that question.

(Mr. Gariepy's last question was read by the reporter as above recorded.)

The Witness: A. Yes, sir.

The Master: That is a pretty broad question.

Mr. Gariepy: That is what Doctor Arnold testified they were going to do and he was entering upon the work of doing it.

Q. What action has been taken, that you know of, other than the May 15th, 1939 and October 16th, 1939, actions?

Mr. Schaefer: That is objected to, if the Master please. Any change in the ordinances of the city of Chicago is a change that is made by the City Council, by the adoption of an ordinance.

Mr. Gariepy: Why do you bring in then the October 16th meeting and subpoena the doctor in here? What difference does it make what the Board of Health does if
2004 the City Council passes on it? Why bring in this doctor and take his testimony?

The Master: I will sustain the objection.

Mr. Gariepy: I don't know why counsel brought him in.

The Master: But you did not object to it.

Mr. Gariepy: I don't understand. We are going into the same thing now that counsel asked about.

The Master: Go ahead now. I sustained the objection.

Mr. Gariepy: Q. Do you know who is working upon this matter of revising the Mayor Kelly Milk Ordinance to bring it up to date?

Mr. Schaefer: That is objected to.

The Master: Sustained.

Mr. Gariepy: Q. Have you had any meeting, Doctor, of the members of the Board of Health after the October 16th, 1939 meeting?

A. No, sir.

Q. Do you know why you were subpoenaed to testify here today, Doctor?

Mr. Schaefer: Objection.

The Witness: A. I have absolutely no idea.

The Master: Objection sustained.

Mr. Schaefer: Was there an answer to that question?

Mr. Gariepy: He says he has no idea.
That is all, Doctor.
The Master: Do you want the answer sticken?
2005 Mr. Schaefer: Yes, I do.
The Master: The answer may be stricken.
Mr. Schaefer: I would like to have this document marked Defendants' Exhibit No. 30 for identification.
(The document referred to was thereupon marked by the reporter Defendants' Exhibit 30, for identification.)

Redirect Examination by Mr. Schaefer.

Q. Doctor, will you look at the document which has been marked Defendants' Exhibit 30, for identification, and tell me whose signature that is?
A. That is the signature of the Surgeon-General of the United States Public Health Service, Thomas Parran.
Q. And will you tell the Master what the document is?
Mr. Gariepy: I object. It speaks for itself.
The Master: Well, he can tell us. Go ahead.
The Witness: A. This is a report that was sent—this is an abstract of a report that was sent to the Surgeon-General by the Advisory Board, making suggestions to the
Surgeon-General, in an advisory way, of certain
2006 changes that should be made in the standard ordinance.
Mr. Schaefer: Q. And the document is a letter from the Surgeon-General addressed to you?
A. Yes, under date of June 27th, and received July 5th, showing what the advisory—
Mr. Schaefer: 1939?
A. 1939, yes.
Mr. Schaefer: That is all, Doctor.
Mr. Gariepy: That is all, Doctor.
(Witness excused.)
Mr. Schaefer: Doctor Black.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

I, Kenneth J. Carrick, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages contain a true copy of Volume 2 of the printed record, printed under my supervision, and filed on the twenty-first day of February, 1941, which, together with Volumes 1 and 3, constitutes the record in the following entitled cause:

Cause No. 7502.

Fieldcrest Dairies (Inc.),
Plaintiff-Appellee,

vs.

City of Chicago (a Municipal Corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Defendants-Appellants,

as the same remains upon the files and records of the United States Circuit Court of Appeals for the Seventh Circuit.

In Testimony Whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this 5th day of September, A. D. 1941.

Kenneth J. Carrick,
(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*

CLERK'S COPY.

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P.F.

No. 9281
S. C.

Vol. III

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Supreme Court of the United States

OCTOBER TERM, 1941

No. 706

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, ET AL., PETITIONERS,

vs.

FIELDCREST DAIRIES, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

PETITION FOR CERTIORARI FILED OCTOBER 20, 1941.

CERTIORARI GRANTED NOVEMBER 24, 1941.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

Petitioners,

vs.

FIELDCREST DAIRIES, (INC.),

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

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For the Seventh Circuit

No. 7502

FIELDCREST DAIRIES, (INC.),
Plaintiff-Appellee,

vs.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,
Defendants-Appellants.

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

TRANSCRIPT OF RECORD FILED JAN. 20, 1941.
PRINTED RECORD.

IN THE

United States Circuit Court of Appeals
For the Seventh Circuit

No. 7502

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Plaintiff-Appellee,

vs.

CITY OF CHICAGO, (A MUNICIPAL CORPORATION), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,
Defendants-Appellants.

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

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ROBERT A. BLACK, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. Will you state your name, please, Doctor?
A. Robert A. Black.
Q. And where do you live, sir?
A. Del Prado Hotel.
Q. And your occupation is what?
A. Physician, pediatrician.
Q. When were you licensed to practice medicine in Illinois?
2007 A. In 1904.
Q. What educational institutions did you attend, Doctor?
A. Washington Academy, Iowa State Normal, Iowa University and Northwestern University.
Q. Are you affiliated with any medical societies?
A. Chicago Medical Society, Chicago Pediatric Society, Chicago Institute of Medicine, American College of Physicians, the American Academy of Pediatricians, the A. M. A.
Q. That is the American Medical Association?
A. Yes.
Q. At the present time, doctor, are you connected with any educational institution?
A. Loyola University.
Q. In what capacity?
A. Presumably the head of the department of Pediatrics, although I am still on leave, though still teaching.
Q. Are there any other educational institutions that you are now connected with, Doctor?
A. No other educational.
Q. What is the nature of your practice, Doctor?
A. Children, entirely.
Q. Are you connected with the Board of Health of the City of Chicago?
2008 A. Yes, sir.
Q. In what capacity are you connected with the Board of Health of the City of Chicago?
A. As a member.
Q. Have you served in any other capacity?

A. I was acting president from some time in the latter part of November until some time in the latter part of May.

Q. November of 1938 and May of 1939?

A. Yes.

Q. During the time you have been connected with the Board of Health of the City of Chicago have you had occasion to consider the matter of the use of paper containers for the distribution of fresh fluid milk in the city?

A. Yes, sir.

Q. When did that matter first come to your attention, Doctor, as nearly as you can remember?

A. Some time in the last part of December or the early part of January.

Q. Of what year?

A. Either December of 1938 or January of 1939, in the very last or the very beginning.

Q. In your opinion, Doctor, is milk an essential item in the diet of infants?

2009 A. Yes, sir.

Q. In your opinion is milk an essential item in the diet of children?

A. Yes, sir.

Q. Based on your experience as a member of the Board of Health and as a pediatrician, do you have any opinion as to the quantity of fresh fluid milk consumed by children under the age of twelve years in the city of Chicago?

A. I would not make an authoritative statement, but I think it would be around 50 per cent.

Q. From the point of view of the health of infants, Doctor, and as a pediatrician, what is your opinion as to the relative merit and demerit of milk containing no paraffin as contrasted with milk which contains undissolved paraffin in quantities varying from one milligram to one hundred and seven milligrams per quart?

A. I know of no work done on that. I know of nothing or no proof from either side. I would prefer my milk not adulterated with paraffin.

Q. You mean, as pediatrician?

A. As a pediatrician, yes.

Q. Doctor, assuming that as a pediatrician you are attending an infant that is suffering from infant diar-

2010 rhea or from some other diseased condition of the stomach or intestines, in the event that you learned that that child was being fed milk which contained undis-

solved paraffin in quantities varying from one milligram per quart to one hundred and seven milligrams per quart, what, if anything, would you do?

A. In milligrams it is hard to translate, but I would have a very strong feeling that if the paraffin was flaky or anything of that sort, I would not use it.

Q. The paraffin is undissolved.

A. If the paraffin is undissolved, in flakes, I would not use it.

Q. And in the event that you found that it was being used, what would you do?

A. I would discontinue it.

Q. Why?

A. After you handle babies awhile you avoid every appearance of evil, even. If you know it is not particularly harmful, or if you have no thought that it is particularly harmful, you are going to avoid any chance whatever, anyway.

Mr. Schaefer: That is all.

Cross-Examination by Mr. Gariepy.

Q. Doctor, do you know any cases of record where 2011 babies have been afflicted with any disease of the intestinal tract and that the disease has been aggravated by reason of undissolved paraffin in milk?

A. I made the statment that I did not know the amount.

Q. This is just your surmise, offhand.

A. Yes.

Q. As a pediatrician?

A. Yes.

Q. When a baby gets milk, it gets the milk warm, doesn't it?

A. Yes.

Q. And to what temperature is the milk warmed?

A. It would be around 98 to 100.

Q. And when would that paraffin melt that Mr. Schaefer asked you about, as being in flaky quantities?

A. I could not say, but I think around 120.

Q. And when you feed this milk to the baby you do not feed it right out of the cup or the bottle, do you? You feed it through some receptacle, don't you?

A. It depends on the age of the baby.

Q. We are talking now about babies one year old or under, Doctor.

A. You feed them through the bottle.

Q. You feed them through a bottle?

2012 A. Yes.

Q. And when you feed them through the bottle you have a nipple on the bottle.

A. Yes.

Q. And is that paraffin so big, that you have in mind, that it would not go through the hole of the nipple?

A. That is what I said; it was flaky.

Q. Did you ever hear or see any flaky particle of paraffin in a bottle of milk that was fed to a baby that did not go through the nipple?

A. I have never fed, to the best of my knowledge, milk to a baby out of a paper bottle.

Q. Or out of any bottle that had paraffin in it?

A. So far as I know.

Q. You do not know of any cases of record where they did that, do you?

A. No, sir.

Q. Paraffin is an inert matter, is it not?

A. So far as I know.

Q. What is it made out of chemically, Doctor?

A. It is made of—well, it is a by-product of oil.

Q. And sometimes children are given oil to secure action in the intestinal tract, are they not?

A. They are.

Q. That does not give them any bad effects, does it?

2013 A. There is a little dispute just now about that. There is some recent literature which seems to show that vitamin C is not absorbed well where the paraffin oil is used.

Q. Do you know what the customary treatment is in Cook County Hospital now, in post operative cases, in order to secure a bowel treatment easily and without distress?

A. I do not.

Q. Do you know whether they give any oil treatments at all there?

A. I give the oil myself.

Q. And did you ever have any harmful effects from doing it?

A. Not that I know of. I am only saying what the recent literature is indicating.

Q. How big is this hole usually employed in these nipples or made in these nipples used on baby bottles?

A. It is quite small. Ordinarily it is said the average needle is used to puncture the hole with.

Q. And the paraffin that you refer to in your opinion, in answering Mr. Schaefer's question, then, I take it, would have to be as big as the end of a needle or large, is that it?

A. Yes.

2014 Q. And you do not know of any cases of that size doing injury, do you?

A. I know of no cases because I have not used it.

Mr. Gariepy: That is all, Doctor. Just a minute, one more question, please.

Q. If the paraffin was of a size sufficient to do any harm, then it would be too large to go through the hole of the nipple, wouldn't it?

A. Well, I would not say just that. If for no other reason, you would be terribly annoyed by having to take the nipple off, and contaminate it, and shake out the paraffin.

Q. But you have had no experience in it?

A. I have had no experience in it.

Q. And have you ever read of any such experience, Doctor, in pediatrics?

A. No, sir.

Mr. Gariepy: That is all.

Redirect Examination by Mr. Schaefer.

Q. Doctor, are babies ever fed milk by any method other than through a bottle?

A. Yes, sir. They are gavaged.

Q. What is that?

A. Fed through a stomach tube.

2015 Q. At what age do infants usually start drinking milk out of glasses, Doctor?

A. Any time from four months on. Usually the mother tries in about five and a half or six months.

Q. Doctor, if an infant five and a half to six months old was suffering from infant diarrhea, the nipple which you have alluded to in answering Mr. Gariepy's question would afford no protection in keeping paraffin from entering the intestinal tract of the baby, would it?

A. It would not.

Mr. Schaefer: That is all

Recross Examination by Mr. Gariepy.

Q. Doctor, have you made any inquiry of pediatricians or health commissioners where single service containers are in use for the distribution of fresh fluid milk in regard to their experience in irritating the tender, sensitive tracts of babies?

A. I have not.

Q. Or these babies that Mr. Schaefer referred to, of four and a half or five months old?

A. I have not.

Q. Or any children up to twelve years old?

A. I have not.

2016 Mr. Gariepy: That is all.

Mr. Schaefer: That is all, Doctor. Thank you.

(Witness excused.)

Mr. Schaefer: Doctor Dulak.

FRANCIS A. DULAK, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. State your name, doctor.

A. Francis A. Dulak.

Q. Where do you live, doctor?

A. 2050 Humboldt Boulevard, Chicago.

Q. And your occupation?

A. Physician and surgeon.

Q. When were you licensed to practice medicine?

A. In 1916.

Q. Where did you receive your education, if any, doctor?

A. Loyalo University and the University of Vienna.

Q. Are you connected with the Board of Health of the City of Chicago?

A. Yes, sir.

Q. In what capacity, doctor?

2017 A. At the present time I am secretary of the Board of Health.

Q. For how long have you been connected with the Board of Health?

A. Seven years.

Q. As a member of the Board of Health of the City of Chicago have you had occasion to consider the question of the use of papex containers for the distribution of fresh fluid milk in the city?

A. Yes, sir.

Q. When did that matter first come to your attention?

A. Why, it is some time ago. I do not remember exactly the date.

Q. What personal knowledge, if any, doctor, do you have of the operation of paper mills?

A. None whatever.

Q. Which manufacture paper board for use in paper milk containers?

A. None.

Q. Do you have any personal knowledge of the operation of any paper mills?

A. I have not.

Q. What personal knowledge, if any, do you have of the operation of plants in which paper board for use in milk containers is cut and printed?

2018 A. None whatever.

Q. What personal knowledge do you have, if any, as to the bacterial effect of paraffin on paper?

A. I have none at all. I don't know much about it.

Q. Doctor, have you any personal opinion as to whether or not the use of paper containers for the distribution of fresh fluid milk should be permitted in the city of Chicago?

Mr. Gariepy: I object to that question, as showing no qualifications or ability or knowledge on the part of this witness to answer that question intelligently.

The Master: I will sustain the objection. He has voted as a member of the Board of Health. That is official action. You are now calling him to impeach his own vote?

Mr. Schaefer: No, sir, I am not. You expressed some concern as to why these witnesses were called.

The Master: Not concern. Just interest.

Mr. Schaefer: Then interest. Let me explain my position, if you will, Master.

What is involved in this case, as I see it, is the reasonableness of an ordinance of the City of Chicago. Going to that question, you have been hearing evidence over an extended period, introduced on behalf of the plaintiff,

2019 tending or intended to show the unreasonableness of that ordinance, and evidence introduced on behalf of

the defendants tending or intended to show the reasonableness of that ordinance.

The Master: No, I don't think that is stating the issue quite accurately. As I recall the pleadings, there are two points here. First, that the ordinance should be construed as broad enough to include within the term of "standard milk bottle" paper containers.

Mr. Schaefer: That is right.

The Master: And, secondly, if the ordinance is interpreted so as to exclude the single service container, then the ordinance or the action of the Board of Health thereunder is arbitrary and discriminatory and unreasonable.

Mr. Schaefer: That is right, yes, sir. It is to the second point that I was addressing myself, as obviously this testimony has not to do with the first point.

The Master: You are talking about the ordinance. Nobody has introduced any evidence here as to the resolution of the Board of Health, until you just brought it in here this afternoon, and the Board of Health, up to this time, in its answer at least, made the contention, or made a double
2020 contention, namely, first, that the ordinance, properly construed, excluded the single service container, and, secondly, that the allegations of the bill of complaint, to the effect that the containers are safe and free from any objection, are not well taken; in other words, you deny all of their allegations as to safety.

Mr. Schaefer: And we assert the ordinance is reasonable.

The Master: All right. Now then, you bring in the resolution of the Board of Health, which is a recommendation to the City Council to amend the ordinance to include the single service containers specifically.

Mr. Schaefer: Yes, sir.

The Master: It is to be assumed that unless they thought the containers were safe, they would not make any such recommendation, so that, if anything, the resolution tends to establish the contention of the plaintiff here, that there is no objection to the containers on the ground that they are unsafe or unhealthful.

Now, you come in here with witnesses from the Board of Health. I do not know what their purpose is. You started out by putting them on as witnesses in chief, as just
2021 further experts. The case was reopened here to give you an opportunity to bring in some evidence concern-

ing the resolution. Counsel here have not objected to your putting on further evidence of experts, and I have permitted you to do it. Now, you come along with a witness and ask him whether he has any opinion as to whether the use of paper containers for the distribution of fresh fluid milk is safe. He has expressed himself by his vote on this resolution.

Mr. Schaefer: If I may state my position, it is this: Throughout this trial every time that an expression of opinion with respect to the subject matter in issue here has been made from a new source, from a source that was not heretofore before you, we have attempted to bring it in and have brought it in. For example, the United States adopting these regulations, we brought that matter out on cross-examination. If this matter occurred before we closed our proof, we would have brought it in then. What you have here now is the action of the Board of Health at its meeting on October 16th, as an expression of opinion by a group not heretofore heard from.

The Master: But they are defendants in this case, against whose action complaint is made.

Mr. Gariepy: That is right.

2022 The Master: Who in their answer stated that they thought the containers were unsafe and who, it will be argued, by their action in passing a resolution are now on record as thinking they are all right, excepting that the ordinance does not permit the use of such containers and therefore they recommend an amendment to the ordinance to include such containers. You bring in the resolution of the Board of Health, which impliedly says that now the Board of Health considers those containers as unobjectionable, but not permitted to be used by reason of the language of the ordinance. Now, the evidence here produced by your witness is that all of the members of the Board of Health voted for this resolution, excepting Doctor Arnold, who was present and did not vote either way. What is the purpose of bringing in this witness now, to impeach this resolution?

Mr. Schaefer: No, sir, I have not attempted to do that at any time.

Mr. Gariepy: He has spoken by being a party to the resolution and a member of the Board.

Mr. Schaefer: May I proceed, Master?

The Master: Yes.

Mr. Schaefer: You have here an expression of
2023 opinion, as I said, as to a matter in controversy, by a group not heretofore heard from. Their opinion is entitled to such weight as it gets by reason of their knowledge of this subject and no further, so far as the validity or reasonableness of the ordinance is concerned.

The Master: Now, let us see. You are representing whom here?

Mr. Schaefer: All of the defendants in this case.

The Master: You are representing the Board of Health?

Mr. Schaefer: And the City of Chicago:

The Master: And the Board of Health has stated that it considers the use of the single service container as objectionable. That is, in its answer. Now the Board of Health states that it thinks it is unobjectionable and recommends that the ordinance permit its use. That is, just some of the defendants. Do you object to the use of that opinion as against the City of Chicago, which is also a defendant?

Mr. Schaefer: I do not object to the use of it. I want to show on what it is based, that is all. It is like any other opinion.

The Master: In other words, you want to attack
2024 the weight—

Mr. Schaefer: I am not attacking anything. I am just bringing the facts before you, so that you can give proper weight to that opinion.

The Master: In other words, you want me to give it as little weight as possible?

Mr. Schaefer: Well, if pressed, I suppose I would state that. It seems to me that the knowledge of the men who have expressed an opinion is pertinent in determining what weight to give to that opinion.

The Master: Well, personally, I cannot see how you, representing the Board of Health, which has filed an answer here stating that the single service containers are unsafe, can let the Board of Health come in and express an opinion, based upon the opinion of the United States Public Health Service, that they are safe.

Mr. Schaefer: If that is what it is based on, that is what I want to show. I want to show on what that opinion is based, and I submit I have a right to do that. Now, so far as our putting it in or the plaintiff putting it in, I have no illusion as to whether or not it should have gone into evidence.

The Master: They probably would have brought it in themselves.

2025 Mr. Schaefer: I think so, but it is an opinion as to one of the issues in this case, and I think you are entitled to know on what it is based.

The Master: It is something occurring after the suit, but in the course of trial, in which the defendants, the Board of Health, have apparently changed their opinion or have changed their position on this subject of safety. That is something that the plaintiff might bring in to show the present opinion of the Board of Health. Then the only question remaining in this case, if that action is to be taken as conclusive on the part of the Board of Health, would be whether the ordinance is to be considered as discriminatory and unreasonable because it excludes containers, which the Board of Health says are safe.

Mr. Schaefer: That is right.

The Master: Now, if you were representing only the Board of Health, I doubt whether you could come in here and say that the Board of Health's action is not to be given full weight, which the plaintiff would contend for. But you come in and say that you also represent the City of Chicago.

Mr. Schaefer: Yes, sir. As a matter of fact, I submit that the relation between the clients that we here rep-

2026 resent and ourselves as their counsel is a matter lying between the defendants and their counsel. No defendant has objected. It seems to me no one else has any right to. Here is opinion evidence, and I want to show you on what that opinion is based. I want to find out and I want you to know. It is a factor which obviously you are going to consider in deciding this case.

The Master: In other words, if the Board of Health asks the City Council to pass an ordinance in which the Board of Health says it is safe, I must in this trial before me, in which the Board of Health has said that it is unsafe, tell the Board of Health they are wrong about it, after they solemnly say they think that the container is safe.

Mr. Schaefer: No, sir, that is not what I am saying. As a matter of fact, the inclusion of the individual members of the Board of Health as defendants is a matter of law and is not necessarily involved. What is involved is an ordinance. The ordinance can be attacked without individual defendants. The fact they are individual defendants here

is just because the plaintiff so framed its case. The essential question is still the same, the reasonableness
2027 of that ordinance, and I submit that you ought to hear opinion evidence as it is advanced on that question.

Mr. Gariepy: We object to hearing any opinion evidence, Master, when an official action of the Board is brought in by the defendants, as shown by Mr. Schaefer. If he attempted to impeach their action for fraud or anything else, that is another question, but the counsel is bound, as is the City of Chicago, by the action of the defendants as to the merits of this litigation. It is always the rule that they are bound by such action. It is not a matter of opinion evidence. It is an official action of the Board, passed by resolution, where all of the members were present and took a part, in voting for it, with Doctor Arnold standing by.

The Master: You put your question again now, Mr. Schaefer.

Mr. Schaefer: Q. Doctor Dulak, do you have any personal opinion as to whether or not, from the point of view of the public health, the use of paper containers for the distribution of milk in the city of Chicago should or should not be permitted?

Mr. Gariepy: I object to that question.

The Master: You object on the ground that there is
2028 no qualification shown?

Mr. Gariepy: That is one of the grounds on which I object, and also that the doctor has already expressed himself as a member of the Board of Health by officially voting on the matter.

The Master: Your first objection is that he is not qualified. I will sustain the objection, and in order to shorten it I will let you make your record, Mr. Schaefer.

Mr. Schaefer: I haven't any record to make. I cannot make an offer of proof.

That is all, Doctor.

Mr. Gariepy: That is all, Doctor.

The Master: Ask your question and put it in the record, if you wish.

Mr. Schaefer: No, I do not care to.

The Master: I am offering to let you ask the question of the doctor, if you wish, and have it in the record.

Mr. Schaefer: Yes, sir.

The Master: You do not care to put him on then for that?

Mr. Schaefer: No, sir.

The Master: Very well.

(Witness excused.)

2029 Mr. Schaefer: Mr. Reynolds.

HARRY J. REYNOLDS, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Schaefer.

Q. Will you state your name, please?

A. Harry J. Reynolds.

Q. Where do you live, Mr. Reynolds?

A. 3240 Lake Shore Drive.

Q. Are you a member of the Board of Health of the City of Chicago?

A. I am.

Q. For how long have you been a member?

A. Six years.

Q. What personal knowledge, if any, have you, Mr. Reynolds, as to the operation of paper mills which manufacture board for use in paper milk containers?

Mr. Garièpy: I object. There have been no qualifications shown on which this witness could answer.

Mr. Schaefer: That is just the reason for the question.

The Master: Overruled.

Mr. Schaefer: Read the question, Mr. Golding.

2030 (Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: I have none.

Mr. Schaefer: Q. And what personal knowledge, if any, have you, Mr. Reynolds, as to the operation of plants in which paper board to be used in paper milk containers is cut, formed and printed?

A. I have none.

Q. What personal knowledge, if any, have you with respect to the bactericidal action of hot paraffin upon paper?

A. Will you repeat that question?

Mr. Schaefer: Read it, Mr. Golding.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

The Witness: A. I have none.

Mr. Schaefer: Q. What personal knowledge have you, if any, with respect to the filling of paper milk containers with milk?

The Master: What is that?

Mr. Schaefer: Filling them with milk.

The Witness: A. I have none.

Mr. Schaefer: Q. Do you attach any public health significance, Mr. Reynolds, to the fact that paper milk containers are uniformly absorbent?

2031 Mr. Gariepy: I object to that question. There has been no showing on the part of this witness that he knows or that he is qualified to answer that question as a public health expert.

The Master: Read the question.

(Mr. Schaefer's last question was read by the reporter as above recorded.)

Mr. Gariepy: I object to that question, Master. It is a subterfuge and attempt to impeach the official action of this officer and this member of the Board of Health, and there is no qualification shown on which he could answer that question intelligently at all.

The Master: Q. Do you know whether they are absorbent or not?

A. Well, I can qualify that in this respect: That after having numerous discussions with the members of the Board of Health at the various meetings, namely, hearing Doctor Black, Doctor Bundesen, Doctor Dulak and Doctor Arnold, who I consider an outstanding bacteriologist, and having it explained to me by him on these occasions, I think the paper is absorbent.

Mr. Gariepy: I move to strike that, Master. His opinion is based on what he heard from somebody else and not of his own knowledge, ability or research.

The Master: Yes, that may be stricken.

2032 Q. You know nothing outside of what somebody else has told you?

A. No. Only after seeing a lot of samples that were tested by Doctor Arnold, it proved to me from a layman's standpoint that they were absorbent.

Q. You never performed any experiments yourself?

A. None whatever.

The Master: What is Mr. Schaefer's question again, Mr. Reporter?

(Mr. Schaefer's question was read by the reporter as follows: "Do you attach any public health significance, Mr. Reynolds, to the fact that paper milk containers are uniformly absorbent?")

The Master: I will let him answer.

Q. Do you attach any significance to it?

A. Yes, I do.

Mr. Schaefer: Q. What significance do you attach to the fact that paper containers are absorbent?

Mr. Gariepy: I am making the same objection, Master, to that question. He is attempting by subterfuge, by asking this witness questions, to impeach his action as a member of the Board of Health in recommending the use of single service containers. It is quite artful and astute
2033 on the part of counsel, but I think it is very obvious to the Master.

The Master: If they are absorbent to a considerable degree, I think it is conceded that there is some health significance, is it not?

Mr. Gariepy: Yes, but he has already gone on record, by Exhibit 29, in saying the ordinance should permit their use, and he cannot impeach his own action.

The Master: That is another question. I think it is agreed here that if paper board containers are absorbent, there is some significance to it.

Mr. Gariepy: There cannot be any public health significance that means anything, otherwise they would not have passed a resolution.

The Master: He says he does regard it as significant.

Q. Now, you have said that you regard it as of some public health significance?

A. Yes.

Q. Do you have any technical knowledge as to in what respect and what effect it may have?

A. Well—

Q. Let me put it this way: Do you have any technical knowledge concerning the effect of the absorbing qualities of paper milk containers?

A. Only that the United States Public Health Service also states that they are absorbent.

2034 Q. I say, do you have any technical knowledge on the subject as to the effect on the public health?

A. Only what I have been told by the doctors or members of the Board.

Mr. Schaefer: That is not my question. That question assumes that technical knowledge is necessary to determine whether or not there is public health significance in the fact a milk container is absorbent. That I submit is a matter that does not require any technical knowledge to answer. Some of the other questions may, but that question does not.

The Master: He has stated whatever he knows about the subject is based upon somebody's else statements to him. I think it is conceded here that if paper board containers are absorbent, it is a question of public health significance. Now then you proceed to ask him in what respect.

Mr. Schaefer: Yes, sir.

The Master: How can he know in what respect?

Mr. Schaefer: Let us see whether he can answer that.

The Master: He stated he has no knowledge of the subject.

Mr. Schaefer: He stated in answer to your question that he had no technical knowledge.

2035 The Master: Yes.

Mr. Schaefer: That is a question for which technical knowledge is not necessary.

The Master: Let us see now.

Q. Do you have any knowledge of any kind upon that subject, of your own?

A. Only that if it is absorbent and milk is put into the paper container, the milk naturally will absorb any ingredients or bacteria that may be in the paper.

Q. That is the extent of your knowledge on the subject?

A. (Witness nods affirmatively.)

Mr. Gariepy: The witness is shaking his head, Mr. Reporter, yes.

The Master: Anything further?

Mr. Schaefer: Q. Do you attach any public health significance to the fact that paraffin gets into the milk which is placed in paraffined paper milk containers?

Mr. Gariepy: I object to that question. It is an assumption on the part of counsel that it does. If this witness is not qualified to answer from a public health standpoint, then he should not be permitted to answer.

The Master: Q. What is your business?

2036 A. What is my line of business?

Q. Yes. I notice he called you Mr. Reynolds. I don't know whether he asked you your occupation.

A. I am the layman member of the Board of Health. I am president of the Independent Boiler and Tank Company.

The Master: How is this witness qualified to give an opinion on the subject of the effect of paraffin?

Mr. Schaefer: Here again I say it does not require any technical knowledge, bacteriological, medical or otherwise.

Mr. Gariepy: Then you can ask a layman about it, Master.

The Master: Yes.

Mr. Schaefer: That is what I am doing.

Mr. Gariepy: Then the Master takes notice of it as a matter of common knowledge.

Mr. Schaefer: That is all, Mr. Reynolds.

Mr. Gariepy: That is all.

(Witness excused.)

The Master: Off the record.

(Discussion had off the record.)

Mr. Schaefer: I offer in evidence Defendants' Exhibits 29 and 30.

The Master: What are they?

2037 Mr. Schaefer: Defendants' Exhibit 29 is a copy of a resolution adopted by the Board of Health of the City of Chicago on October 16th, 1939, with respect to single service containers for milk, consisting of seven pages.

Defendants' Exhibit 30 is a photostatic copy of a letter from Thomas Parran, Surgeon-General of the United States of America, addressed to Doctor Herman N. Bundesen, dated June 27th, 1939, received by the Board of Health July 5, 1939, transmitting to Doctor Bundesen copies of the regulations adopted by the United States Public Health Service with respect to paper containers. That consists of three sheets.

By agreement of counsel, the last two pages of the Defendants' Exhibit 30 are withdrawn, because they are identical with the last two pages of Plaintiff's Exhibit 61.

The Master: Defendants' Exhibits 29 and 30 may be received.

(Said documents, being copy of resolution adopted by Board of Health, October 16, 1939 with respect to single service containers, and a photostatic copy of letter from

Thomas Parran to Doctor Bundesen, dated June 27,
2038 1939, were received in evidence and marked respectively DEFENDANTS' EXHIBITS 29 and 30, and are attached hereto and made a part of the record hereof.)

Mr. Schaefer: That is all, sir. We close now.

Mr. Gariepy: We have Thursday, I understand, for our rebuttal?

The Master: Yes. Let the record show that this hearing will be resumed at 10:00 o'clock A. M. on next Thursday.

(Whereupon an adjournment was taken in the above entitled cause to 10:00 o'clock A. M., Thursday, October 26, 1939.)

2039 • • (Caption) • •

Thursday, October 26, 1939,
10:00 o'clock a. m.

Met, pursuant to adjournment.

Present:

Mr. Gariepy, Mr. Rall, on behalf of plaintiff.
Mr. Schaefer, Mr. Horan, on behalf of defendants.

2040 Mr. Gariepy: Swear the witness please, Master.

DAVID J. DAVIS, called as a witness on behalf of the plaintiff, in rebuttal, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name, please.
A. David J. Davis.
Q. And your address, residence.
A. 721 Elmwood avenue, Wilmette.
Q. What is your business or occupation?
A. Dean of the College of Medicine, University of Illinois.
Q. And how long have you been such?
A. Fifteen years.
Q. Is Doctor Lloyd Arnold one of the professors at the University of Illinois, under your jurisdiction?
A. Yes.
Q. I subpoenaed you to produce the contract of employment between the University of Illinois and Doctor Lloyd Arnold concerning his services there.
A. Yes.
Q. Have you that with you?
A. Yes.
2041 Q. Will you produce it, please?
A. Yes (handing document to Mr. Gariepy).

Mr. Gariepy: Mr. Golding, will you mark that Plaintiff's Exhibit 90 for identification?

(The document referred to was thereupon marked Plaintiff's Exhibit No. 90 for identification.)

Mr. Gariepy: Q. Doctor, showing you Plaintiff's Exhibit No. 90 for identification, which you just handed to me, a blue piece of paper dated July 24, 1939, is that the present existing contract of the University of Illinois with Doctor Lloyd Arnold for his professional services as a professor and a member of the staff?

A. Yes.

Q. Is there any other contract with Doctor Arnold concerning his services and the time he is to put in at the University and the time outside?

A. No.

Q. That is all?

A. That is all.

Mr. Gariepy: I offer that in evidence, counsel as PLAINTIFF'S EXHIBIT 90.

Mr. Schaefer: The only objection to that is as to the materiality. We are running up a record here. I do not see that Doctor Arnold's contract with the University
2042 is pertinent. I do not have any feeling one way or the other, if you want to let it in.

Mr. Gariepy: My answer to that is that this is competent. Doctor Lloyd Arnold testified in the record, Page 1711, to be exact, that he had a contract with the Board of Trustees of the University of Illinois for 80 per cent of his time.

Mr. Schaefer: That is what I say. If you want to put it in, O. K.; I don't care. To save time, I will withdraw the objection.

Mr. Gariepy: No, we withdraw the offer, then.

Q. Is there any other contract that you have with Doctor Arnold concerning his services?

A. No.

Mr. Gariepy: You keep this paper then, doctor. Is there any cross-examination?

Mr. Schaefer: No.

Mr. Gariepy: Doctor Lloyd Arnold, will you take the stand?

Mr. Schaefer: Are you through with Dean Davis?

Mr. Gariepy: Yes.

(Witness excused.)

Mr. Schaefer: I am just wondering what the status of the record is.

The Master: This is rebuttal, now.

2043 Mr. Schaefer: Yes, I am wondering with respect to this point. Doctor Arnold's testimony is to the

effect that his contract called for 80 per cent of his time has been challenged and the contract has been produced.

The Master: It shows in the record.

Mr. Schaefer: It has been subpoenaed all over town. It has been here.

The Master: The record now shows that he spends 80 per cent of his time under his contract or he is obligated to spend 80 per cent of his time. You made that statement that the contract shows it and it is conceded by Mr. Gariepy.

Mr. Schaefer: If that is conceded, all right.

The Master: Although I do not know what the materiality is, whether he spends 80 or 50 or 40 per cent of his time there. I don't know what that has to do with the case.

LLOYD ARNOLD, recalled as a witness on behalf of the plaintiff, in rebuttal, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. Doctor Arnold, you are the same Doctor Ar-
2044 nold who testified here the other day?

A. I am.

Q. And did I understand you to say you were professor of bacteriology at Loyola University in 1922?

A. In 1921. I think I came there in 1921 or 1922, yes, sir.

Q. At what office, what position?

A. I came there in bacteriology, pathology, public health and clinical diagnosis.

Q. As professor?

A. I came there as associate professor and then was promoted to professor.

Q. And what year were you promoted to professor?

A. I have forgotten. The first or second year I was there. I think the second year.

Q. That would be what year?

A. About 1922, I expect, or 1923, I don't know which.

Q. Will you look at a bulletin of the Loyola University School of Medicine for the year of 1921-1922, especially with reference to page 18, listing you as a member of the

faculty, and tell me whether that is a correct listing on the lefthand sheet there?

A. Yes, sir.

Q. As assistant professor?

2045 A. Yes, it must be, if it is in there.

Q. Then you want to stand corrected as to being an associate professor and full professor, is that right?

A. Yes, sir.

Mr. Schaefer: What year does that cover?

Mr. Gariepy: It is the fall, I take it, of 1921, and the whole year of 1922. These are put out in the fall by all of these universities.

Mr. Schaefer: You mean, the scholastic year of 1921 and 1922, running to about June of 1922?

Mr. Gariepy: That is right.

Q. Doctor, you were subpoenaed to produce the cartons or containers and materials that you testified on direct examination you received from the Ex-Cell-O Corporation in the year 1938?

A. Yes, sir, these are the ones. That is all I have left of them (handing cartons to Mr. Gariepy).

Mr. Gariepy: Is this the way they came?

A. No, they came in a package. The outside package is gone. They came to my home address. I picked up those at home this morning. That is all I had left.

Q. Referring to these that you handed me.

A. Yes, sir.

Q. Not those?

A. Those that I handed you, I think, are Pure-

2046 Pak containers.

Q. Was there any letter in connection with that?

A. No, sir, I don't remember a letter at all, Mr. Gariepy.

Q. Were there any Risdon Dairy containers, from the Risdon Dairy in Detroit?

A. I don't remember any of them.

Q. These are blanks of Sylvan-Seal?

A. I don't remember. I didn't look at the dairies.

Q. These are all Sylvan-Seal?

A. I didn't look at the dairies.

Q. Are those the ones you referred to in your direct examination, doctor, as coming from Detroit?

A. Yes, sir. Early in 1938. I don't just remember the date.

Q. You testified on direct also that you did work for Seal-Rite Corporation during the last six months, from June to December, 1938, and I asked you to produce this morning, if you have them, vouchers for services in connection with the last research work and the date you did it in the year 1938 for Seal-Rite Corporation. Have you anything on that?

A. No, sir. I was consultant to Seal-Rite. I was on a monthly remuneration fee.

Q. What I wanted was the last time you received
2047 any remuneration from the Seal-Rite Corporation in connection with their research work on that paper bottle that you referred to on direct.

A. I received the last check from them in December for November's services.

Q. If I understood you correctly on direct examination, doctor, you stated that one hundred and thirty-eight tests were performed in the Board of Health under your direction and suggestion, from February 2, up until the present time, is that right?

A. I do not recall. One hundred and thirty-eight tests?

Q. Yes.

A. No, I would not remember any definite number of tests at all.

Q. You do not?

A. No, sir, I do not.

Q. Do you know exactly how many tests were performed over there at the Board of Health?

A. I do not, no, sir.

Mr. Gariepy: That is all, doctor.

The Master: Any questions, Mr. Schaefer?

Mr. Schaefer: No.

(Witness excused.)

2048 Mr. Gariepy: Mr. Martinek, will you take the stand?

MATTHEW J. MARTINEK, was recalled as a witness on behalf of the plaintiff, in rebuttal, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Gariepy.

Q. You are the same Matthew J. Martinek who testified here before?

A. Yes, sir.

Q. I subpoenaed you to produce original documents with relation to the tests that you testified you performed in connection with paraffin suspension. Have you those with you?

A. I have.

Q. May I see them?

A. Yes. (Witness hands cards to Mr. Gariepy.)

Q. Are these in the order they were made out, by dates?

A. They are mixed. We had to get them at random this morning. We would have to bring in three hundred of them, to bring them all in.

Q. Can you pick out any of these cards by these tests, Mr. Martinek, on Pure-Pak containers?

2049 A. These were all picked as Pure-Pak this morning. The numbers were referred to, the ones we have there, on the bottoms of the cartons. I can pick out any one you wish.

Q. You say these are all Pure-Pak?

A. Yes, sir.

Q. What shows that? These are just blank numbers. How do you refer to Pure-Pak or another container on there?

A. This dairy number will be found on a Pure-Pak container.

Q. Where are those containers?

A. They are right here, these cards here, right back there. I will bring them out for you.

Q. No, I will get them. Are these the folders in which they came?

A. Yes.

Q. These are Bowman folders?

A. We just saved them. I don't know that they exactly came in those, but we kept the carton forms, those folders.

Q. Where is there anything on there about Dean or Fieldcrest, on these folders? You got them around Cook County or within a radius of seventy-five miles didn't you?

A. I suppose so. I don't know where they got them.

2050 The Master: Q. You did not get them?

A. No, I didn't get those, no.

Mr. Gariepy: Q. And these are the total number of Pure-Pak containers that you say you performed these tests concerning paraffin suspension in milk on?

A. No, sir, they are not all.

Q. How many more of them are there, Mr. Martinek?

A. I don't know.

Q. There is about thirty of them?

A. Here is the only thing. When I counted these up I counted them with the others, with the American Can, so I don't know.

Mr. Schaefer: Mr. Martinek, you might explain to the Master at what time this subpoena was served on you.

A. It was brought in at 9:00 o'clock this morning.

Mr. Gariepy: Q. These numbers that you refer to on the cards, are these numbers indicated on the flaps, is that right?

A. Yes.

Q. You don't know anything about the condition in which these containers that you brought in here this morning were taken from the plant, do you?

A. I do not.

2051 Q. Or whether they were taken from the plant?

A. I do not.

Q. How many altogether, do you know, Mr. Martinek, by looking at these cards, can you tell the Master you performed paraffin suspension tests on?

A. Oh, about twenty or so.

Q. Twenty or so?

A. Yes.

Q. Is that all, or just Pure-Pak?

A. Well, no. There were three hundred, but my chemists ran some of the tests. I supervised the work.

Q. There were three hundred on Pure-Pak?

A. No.

Q. Or three hundred altogether?

A. I don't know how many on Pure-Pak. I absolutely have no idea.

Q. And that applies to the testimony you gave in the record from page 1602 to page 1612 concerning this paraffin suspension test on all of them? You don't know which ones it pertains to, is that it?

Mr. Schaefer: I object to that. How can the witness know what is in the transcript at page 1602?

Mr. Gariepy: Those are the pages on which he gave his testimony.

The Master: Q. Do you know?

2052 Mr. Schaefer: If the Master please, he has not seen the transcript.

The Witness: What is that?

The Master: Read the question.

(Mr. Gariepy's last question was read as above recorded.)

Mr. Gariepy: Q. Whether Pure-Pak or another type of container.

A. I do not.

Q. Did you perform any tests in connection with these containers concerning lead content in milk?

A. No, sir.

Mr. Gariepy: That is all, Mr. Martinek.

The Master: Any cross?

Cross-Examination by Mr. Schaefer.

Q. To the best of your recollection, Mr. Martinek, how many of the containers that you examined for paraffin suspension in milk were containers of the Pure-Pak type, which is the type that you have here?

A. It is pretty hard to say, because we had them mixed. At one time we had quite a few Pure-Paks and then we had the American Can also. It would be pretty hard to tell, because it would be purely a guess and I would not want to guess.

2053 Q. The records would show?

A. The records would show, if we sorted them out. That is what we are doing now.

Mr. Schaefer: That is all.

Redirect Examination by Mr. Gariepy.

Q. Are they in the same condition, these containers you brought over this morning, as when you received them?

A. They also have the methylene blue streaks in them and they might be slightly damaged. I would not know that.

Mr. Gariepy: I see. That is all.

Mr. Schaefer: That is all. Thank you, Mr. Martinek.

(Witness excused.)

Mr. Gariepy: I have not had an opportunity to say a word to this next witness this morning. The fact is, I have never him. So I am going to ask Mr. Rall, who has talked to him, to ask him the questions.

2054 WILLIAM D. McNALLY, called as a witness on behalf of the plaintiff, in rebuttal, having been first duly sworn, testified as follows:

Direct Examination by Mr. Rall.

Q. Will you state your name, please?

A. William D. McNally.

Q. Where do you live?

A. 3734 North Harding avenue, Chicago, Illinois.

Q. What is your profession or occupation?

A. I am a physician and toxicologist.

Q. Are you licensed to practice medicine in the state of Illinois?

A. I have practiced medicine and have been licensed over twenty years in the city of Chicago, Cook County, Illinois.

Q. Did you attend any schools in preparation for the practice of medicine?

A. I did.

Q. Where?

A. The University of Michigan, University of Illinois, and Chicago Rush Medical College.

Q. Did you receive any degrees from any of these schools?

2055 A. I did.

Q. What were they?

A. A.B. from the University of Michigan, M.D. from the University of Chicago, Rush Medical College.

Q. What has been the nature of your practice, doctor?

A. My practice has been largely that of a physician and a consulting toxicologist.

Q. Have you held any official position?

A. Yes. I was toxicologist to Coroner of Cook County for about seventeen years. I established the first laboratory of toxicology in America.

Q. What is toxicology?

A. Toxicology is the science that treats of poisons, their origins and their detection by chemical or other means.

Q. Of what did your duties consist while you were Coroner's chemist?

A. Examination of the organs of human bodies for poison, examination of medicines for poisoning, and examination of clothing and weapons for stains, blood stains, examination of clothing for seminal stains, and research, and the publication of my research.

Q. Have you published any book?

A. I have published two books.

Q. On what subject?

2056 A. On the subject of toxicology and medical jurisprudence.

Q. Have you written any articles, other than books?

A. Yes. Probably two hundred articles on various phases of poisons and their detection.

Q. Are you familiar with the literature relating to poisons?

A. Very much so.

Q. Your referred to being a consultant in toxicology. Of what does that practice consist?

A. That consists of consulting and conferring with industrial concerns or manufacturing concerns regarding hazards in their plants, the examination of employes, examination of the secretions of those people for the presence of poisons, examination of the blood, to see whether there is destruction of the hemoglobin, blood counts, physical examinations, interpretation of X-rays regarding silicosis.

Q. Are you consulted by other physicians?

A. I am.

Q. Are these consultations frequent or infrequent?

A. They occur frequently.

Q. What is the definition of a poison, doctor?

A. A poison is a substance which when absorbed into the blood stream is capable of seriously affecting

2057 the health or causing death, and that is its chief action.

Q. Have you made any special study of metal poisonings?

A. Yes, sir, I have.

Q. Of what does that study consist?

A. I have made special studies of arsenic, lead and manganese, and published exhaustive articles on the latter metal, manganese.

Q. Of what did your special studies of lead poisons consist?

A. Considerable experimental work with animals and work with human beings, showing the elimination of the lead by various agents and diets.

Q. Does lead poisoning have a more technical name?

A. Well, it is sometimes called plumbism. Most of the lead intoxications, it seems, come from men working with solders or in the smelting of lead. In other words, forms of finely subdivided lead are the chief sources of poisoning.

Q. You referred to lead intoxication. Is that synonymous with lead poisoning?

A. Yes, sir, it is. The laity call it plumbism probably more often than they do lead poisoning.

Q. You say the laity do?

A. Yes. They know it as plumbism.

2058 Q. What are the effects of lead poisoning on the human system?

A. Well, we have acute intoxication where a person has taken half an ounce to an ounce of lead acetate, which causes vomiting and diarrhea. Then we have the acute effect of inhalation, where large quantities of lead fumes are inhaled, causing great muscular weakness, destruction of the blood cells and constipation.

Then we have the chronic form of lead intoxication, where there is great muscular weakness and pain in the part of the anatomy that is used most by that individual. Painters get it in the wrist. Men who are shovelling metal into furnaces get it on the anterior front part of the legs and thighs. There is abdominal cramps. There develops a lead line in those individuals having pyorrhea or a defecture denture.

Mr. Schaefer: Q. A lead line, did you say, doctor?

A. Pyorrhea or a defective denture.

Q. The word I missed was, I thought, lead line?

A. Yes, sir, lead line. L-e-a-d l-i-n-e.

Q. Lead line?

A. Lead line is caused by the absorption of lead in the system. It is taken by the blood to the gums which
2059 are diseased and there is hydrogen sulphide there from the decaying of the foods and there is a deposition of very minute particles of lead, which can be seen with the aid of a magnifying glass.

The Master: Q. That is on the gums?

A. On the gums, as they come in between the teeth. It is very rarely seen. Sometimes there is confusion among physicians in diagnosing colored people, seeing an African line and calling it a lead line, which is not so at all. Necessarily all colored people have this blue discoloration below the gums. But this other can be detected by a microscopical examination of a small portion of the affected material squeezed from the gums.

Mr. Rall: Q. Have you seen cases—

A. That is not all. I have a lot more to tell you about that.

Q. All right, continue, doctor.

A. The blood is changed. One of the first things we note in chronic cases of lead intoxication is a reduction in the hemoglobin. Hemoglobin is the red coloring matter of the blood. There is a destruction of the red blood cells, so that in an adult having a count of five million red cells per cubic millimeter of blood, it may be reduced down
2060 to as low as 3,600,000.

These people have arthritic pains in the joints. There is loss of appetite. They lose weight because they have lost their appetite. The pains in the abdomen have been confused with colitis and appendicitis, and those people have been operated on for appendicitis occasionally because of the confusion in the diagnosis.

Diagnosis of lead poisoning can only be made by an examination of the blood showing basophilic stippling or by running a basophilic aggregation known as the McCord test, which is applicable only in acute cases of poisoning.

The other is chronic cases of poisoning, and the demonstration of abnormal amounts of lead in the urine before and after potassium iodide treatments. This is a diagnostic test and my name is connected with the potassium iodide test.

People in the Chicago area eliminate from mere traces of lead up to .09 of a milligram per liter of urine every day.

Q. Are you there referring to the normal?

A. Yes, normal. Anyone in this room would show lead from mere traces up to .09 of a milligram.

The Master: Q. Where do they get this lead?

2061 A. This lead comes from everything we drink and everything we eat. There is not an article which enters your table but what has lead in it.

Mr. Rall: Q. Is that a normal or abnormal condition?

A. That is a normal condition.

Q. And not harmful, I take it?

A. No, sir, it is not.

Q. Have you completed your answer, substantially?

A. I think that covers it.

The Master: Q. Is any part of the lead absorbed in the system as nourishment?

A. No, sir, lead is not a factor, as far as I know, in the metabolism of the human body. The lead taken in these foods, part of it is eliminated in the urine and stool and some of it is deposited in the bones as a tribasic calcium phosphate, an insoluble form, which does not get out into the blood stream, unless the person has an infection, like influenza, pneumonia, or is becoming an alcoholic, when his resistance is lowered and the lead then goes out into the blood stream.

Mr. Rall: Q. Have you seen cases of lead poisoning in adults?

A. Yes, sir, many hundreds of them.

2062 Q. And in children?

A. Yes. I have only seen a couple in children.

Q. What, in your opinion, is one of the causes of lead poisoning in children?

A. Th e cause of the poison in the children was due to eating the paint off of white painted cribs containing lead acetate.

The Master: Q. What kind of cribs?

A. Cribs painted with white lead. The children would chew the woodwork of the cribs and in that way get the paint.

Mr. Rall: Q. From your own personal experience or from a reading of the literature or from consultation with any other physicians or from any source whatever, do you know of any instances where lead poisoning was attributed to or suspected to be caused by the consumption of milk from printed paper cartons?

A. I do not.

Q. What are the principal causes of lead poisoning?

A. The principal causes of lead poisoning are the inhalation of fumes of finely divided lead, from the smelting of lead, from removing it from steel articles with torches, from the manufacture of lead itself, from the lead carbonate, lead acetate, white lead.

2063 Q. Do you know or have you heard from any source of any instances where lead poisoning was attributed to or suspected to be caused by printing inks used on any type of food container?

A. I have not. I never have been consulted in a case of lead intoxication from that. I have never seen anything in the literature regarding intoxication in foods that were contained in cartons or paper printed with a lead-containing ink.

Q. And that applies to liquid foods as well as solid foods?

A. Yes, sir.

Q. In connection with your study and so forth of lead poisoning, have you studied the question of what quantities of lead cause lead poisoning?

A. Yes. In these large number of people that I have investigated, when the quantity of lead in the urine is over one-tenth of a milligram per 1000 cc., then we know that they are suffering from mild forms of lead intoxication, that is, from lead not being eliminated normally. After the potassium iodide treatment, this may be increased three or four times. That, of course, is not lead that is causing any trouble. That is lead that has been stored up in the bones, which we have eliminated by our chemical means.

2064 Q. You have this morning, have you not, examined a number of flat paper cartons, including two cartons which are sealed at the side?

A. I examined similar cartons. I did not put my initials on them and number them to see whether they were the same ones, but they were similar to these.

The Master: Let the record show that counsel has exhibited to the witness flat containers.

Mr. Schaefer: I think they are called blanks, for the record, Master.

The Master: What is that?

Mr. Schaefer: I believe they are called blanks.

The Master: Blanks, yes. The flat ones are made by

the Gardner-Richardson Company and the Ex-Cell-O Corporation, or as produced for the Ex-Cell-O Corporation by Gardner-Richardson Company, Middletown, Ohio.

Mr. Rall: In order not to encumber the record, when Mr. Fisher and, I believe, Mr. Taylor, were testifying, a considerable number of these unformed cartons and some that had the side seal seam, but were otherwise not formed, were produced and examined by witnesses. It is my purpose here, Mr. Schaefer, to get the worst example of offset with the type of ink that contains the largest amount of lead in the evidence here, so that having that in mind,
2065 if these cartons do not have enough offset on them, I would like you to get ones that do.

The Master: What do you mean by offset, for the record?

Mr. Rall: The offset being the impression of ink on the blank or inside of the carton.

The Master: You mean the impression from another container or another blank?

Mr. Rall: Yes.

The Master: With which this surface has come in contact?

Mr. Rall: Yes.

I would like to have the reporter mark this blank Plaintiff's Exhibit 91 for identification.

(The blank carton referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 91 for identification.)

Mr. Rall: Q. I show you Plaintiff's Exhibit 91 for identification, doctor. In your examination of the cartons, printed cartons, is that the worst case of what we call offset that you observed?

A. Yes, I think that is the heaviest that I have seen.

Q. Assume, doctor, that paper intended to be used for the packaging of fresh fluid milk is printed with a
2066 printing ink containing from .2 of 1 per cent to 35 per cent of lead, and that in the printing operation—

Mr. Schaefer: Just a minute. What is that? Ten per cent?

Mr. Rall: From .2 of 1 per cent to 35 per cent.

Q. (Continuing) —the ink on the printed surface offsets against and adheres to the paper lying next to it, so as to leave an offset or smear of the ink on the part of the paper intended to form the inside of the milk container; that

the paper is stored and cut so that at this point in the operation the paper is in substantially the form of Plaintiff's Exhibit 91.

Further assume that this paper is then sealed at the sides to form what is called a blank, with the ends open, but the side seams sealed, in substantially the form of Plaintiff's Exhibit 3.

Further assume that these open ended cartons in that form are placed on a machine, which opens the carton and folds over the bottom flaps so as to form a container, with the side seam and the bottom seam saled, and that in that condition the container is immersed in liquid paraffin U. S. Pharmacopoeia 12, with an American melting point of approximately 125 to 127 degrees Fahrenheit, but as-
2067 sume that in the paraffining operation the paraffin does not cover the ink offset on the inside of the container.

Assume further that the container in this condition is cooled at approximately 40 degrees Fahrenheit, until the paraffin is hardened, and that in that condition it is filled with cool liquid milk, cream, buttermilk or chocolate milk, and that the machine referred to then closes the top of the container thus filled with one of the products mentioned and, under pressure, staples the top flaps, so that the container filled with milk is then sealed in the way that Plaintiff's Exhibit 2 is sealed.

Assume that the pouring spout has not been opened at the time referred to.

Further assume that this package is delivered to a person who places it in the refrigerator for a period varying from twenty-four to ninety-six hours and that the milk or other liquid products referred to is then drunk by said person, or some member of his family.

Do you have an opinion whether or not the presence of the ink on the inside of the carton or any of the other factors which I described in the question presents any hazard
2068 to the health of the person so consuming the milk, or other liquid products mentioned?

A. I have an opinion.

Q. Will you state what that opinion is?

A. That the hypothetical carton as described by you containing milk, that has been allowed to remain to the extreme time of ninety-six hours, would not be a health hazard, because, first—

Mr. Schaefer: May I have the last part of that question read?

(The portion of the question referred to was thereupon read by the reporter.)

The Witness: A. (Continuing.) —the ink—

Mr. Schaefer: I submit that the question asked what the effect would be on the person who consumes that milk. I do not want to interrupt, but the doctor's answer so far indicates that he is not answering the particular question which was asked.

The Master: Let us have the question again.

(The question was read as above recorded.)

The Master: Off the record—

(Discussion off the record.)

The Master: Objection overruled. Go ahead, doctor.

The Witness: A. (Continuing.) —because, first, the pigment contained in these various inks may be lead,
2069 manganese or cobalt, and they are in a base of a gum and linseed oil.

These pigments are heated to a high temperature, to make the ink. The ink as printed upon these cartons forms a film, due to the oxidation of the linseed oil, or a lead linolate, which is difficultly soluble in water, milk and dilute acids.

In order to separate that lead for a chemical analysis, it is necessary to ash it or oxidize it with strong acids, like nitric acid.

Secondly, in addition to the film which is formed on these inks due to the oxidation of the linseed oil, we have a covering of paraffin.

Mr. Schaefer: Now, I object to that, if the Master please. I would have objected to that question before, except when the questioner framed the question he very carefully excluded the paraffin covering of the container.

The Master: Yes.

Mr. Schaefer: However, I will withdraw that objection.

The Master: All right. Read as far as the witness got.

(The witness' answer was read as above recorded.)

2070 The Master: Continue.

The Witness: A. (Continuing.) That was so described in the hypothetical container, such as I have to consider here. That gives a double coating to this ink. The paraffin is insoluble in milk. Therefore, the milk would not get to the lead compound if it were soluble. So you have two barriers for this lead compound getting into the

milk, which would eliminate your ink as a lead hazard or as a cause for lead intoxication.

The Master: Have you completed your answer?

The Witness: A. Yes, sir.

Mr. Rall: Q. Assuming that at the place where this ink is present the paraffin coating, for some reason, is not present. Does that alter your opinion as to whether that presents a health hazard?

A. You would still have your film of oxide of linseed oil present, which is insoluble in the milk. It would not release the lead.

The Master: Off the record.

(Discussion off the record.)

Mr. Rall: Q. The Master suggests that if the first film is not present, which you referred to as the result of oxidation—

A. It would always be present.

2071 The Master: Q. Assume that for some reason it had been taken off.

A. When it dries there would have to be some of it there, because it is just like the paint on a wall or the outside wall of your home, that has got linseed oil, turpentine and the pigment in it, which is subjected to the weather, the rain, the elements, snow, heat, cold and ice, which is the greatest factor for removing that pigment. In other words, that pigment will stay until the linseed oil has become disintegrated by the ice and sleet.

Q. Mr. Rall started to ask you, assuming there were not present either one of those two films, is there enough ink constituting that offset or is there enough lead there present to present a health hazard, which lead might get into the milk?

A. If it was in an insoluble form, no, as the maximum amount of offset as I see it in that exhibit here would not present a health hazard.

Mr. Schaefer: Will you read the Master's question?

(The record was read as above recorded.)

The Witness: The answer was: "No."

The Master: Q. That is to say, the amount of lead in the ink would not be soluble?

A. It would not be soluble in milk, no, sir. But
2072 you have that double protection here. You have the oxidation envelope of lead, because this ink is manufactured with heat applied to the gums and the linseed oil.

Q. Let us go one point further now. Let us assume there is not a film of paraffin, there is not the oxidized film, and that the lead in the ink is not in insoluble form, but is soluble; is there enough lead present in that ink constituting this offset to present a health hazard?

A. In my opinion, no.

Mr. Rall: Q. And is that opinion based upon your knowledge of chemistry, your practice of medicine and your study of toxicology?

A. Yes, sir.

Q. In the hypothetical carton and the circumstances surrounding it which I gave, do you have an opinion whether there is any hazard to the public health involved?

A. From the milk contained in any carton similar to what I have been presented, no, sir; I cannot see any health hazard.

Q. In the case of lead poisoning, are there any aspects of it which are peculiar to infants?

2073 A. Yes. Infants absorb the lead and it is fixed in the cranial bones, the epiphyseal or long bones of the infants, and that can be demonstrated by the X-ray.

The Master: Q. What are the epiphyseal bones?

A. That is where the bone is not ossified. Our bones are not completely ossified until we have reached the age of eighteen, and then there is a calcium deposition at the ends of the bones.

Mr. Rall: Q. In giving your opinion and the reasons therefore, have you considered the health hazard as it related to infants as well as to adults?

A. Yes, sir.

Q. And that under the hypothesis given it is your opinion that there is no health problem either as to adults or infants, is that correct?

A. Yes. By the administration of milk you are giving one of the best antidotes that we know in toxicology for lead intoxication, because of the calcium in this milk. It causes a deposition of the lead in the bones. In industrial plants, in which I have been a consultant, I give them milk to drink, where they are exposed to high concentrations of lead during the mixing of lead paints, with the end results that we have not had lead intoxication in those plants

2074 where they are taking milk.

Q. At the other end of the life scale, take a senile

person, would your opinion that no health hazard is presented apply equally to such a person?

A. Oh, yes. They are still drinking milk, which, as I said, is one of our best antidotes, and there would not be enough coming off of this offset to be a health hazard.

Q. Are familiar with paraffin, pure refined paraffin, meaning U. S. Pharmacopoeia Standard 11, with an American melting point of approximately 125 to 127 degrees Fahrenheit?

A. I have used paraffin in the laboratory. I have seen it used at home, in the capping of jells and jams. It has been used in my home for a good many years in that manner. I have used large quantities of that same sort of paraffin in cutting sections of human organs, when I was interested in pathology.

Q. I believe the last edition of the U. S. Pharmacopoeia is 11?

A. Yes.

Q. And my hypothetical question I referred to U. S. Pharmacopoeia 12. Without objection may that be changed?

2075 The Master: Q. Does that make any difference in your opinion, doctor?

A. No, because it will be 12 now instead of 11. The new one is under revision at the present time.

Mr. Rall: Q. Do you have an opinion as to whether the taking of paraffin in quantities of from 1 milligram to 107 milligrams, of the kind described, through the mouth, is harmful to health?

Mr. Schaefer: I object to that, if the Master please, because the question is not proper rebuttal and the answer will not be proper rebuttal. The only question that was asked with respect to that subject dealt with infants under the age of one year. No question was asked with reference to adults. So far as infants are concerned, Doctor McNally's qualifications have not yet been demonstrated.

Mr. Rall: So far as the general question of whether it must be limited to infants under one year is concerned, Doctor Arnold referred to what he called the ingesting of paraffin. No, I am wrong. He was talking about the ingesting of the milk. He talked about the presence of paraffin being an adulterant and referred to the fact that while it might not be harmful to adults, upon which,

2076 as I recall, he expressed no opinion, or at least no

adverse opinion, nevertheless he did refer to adults, and I think I am entitled to show it both generally and specifically.

The Master: You have not qualified this witness, have you, on that? You qualified him as an expert on poisons.

Mr. Rall: Well, I will withdraw the question and ask him this:

Q. Doctor, have you an opinion as to whether paraffin of the kind described is a poison?

A. It is not.

The Master: Q. Either to adults or infants?

A. To anyone.

Mr. Rall: Q. Is there anything about its chemistry which in your opinion is harmful to human health, either adult or infant?

A. It is not.

Q. Is there anything about its physical properties, in the quantities described, from 1 milligram to 107 milligrams, which if taken through the mouth, either by an infant or by an adult, is harmful to health?

Mr. Schaefer: I object to that, on the ground the witness is not qualified to express an opinion on that question.

2077 The Master: What other qualification do you want him to have?

Mr. Schaefer: What does the doctor know about the health of infants?

The Master: Do you want to qualify him along those lines, Mr. Rall?

Mr. Rall: Yes, I will go a little further.

Q. What, if any experience have you had in the use of paraffin or paraffin products in connection with your medical and professional work?

A. I have never given paraffin internally as medicine. I have given mineral oil, which is a higher grade of mineral product than paraffin. I have never given it internally and it is not given internally in the United States Pharmacopoeia.

Q. What has been your experience with the products —do you say mineral oil?

A. Yes.

Q. What has been your experience in that regard?

A. I have given lots of mineral oil as a laxative. It is not digestible. Neither is the paraffin digestible. It passes through unchanged in the stool.

Q. If the taking of paraffin were to cause disturbances to the human body, would that be the type of case that
2078 would come to you professionally, in connection with your consulting work?

A. Yes. If paraffin had been considered by physicians as an irritant or some firm was manufacturing a product which was encased in a paraffin-coated receptacle, I would be one of the people in the United States to be consulted along that particular line.

Q. Are you familiar with medical literature generally?

A. I am.

Q. Do you know of any instance, either in the literature or from your own experience or from consultation with other physicians, or from any source, when bodily disturbances of any kind were attributed to or suspected to be caused by the taking of paraffin, the accidental or other taking of paraffin through the mouth by any individual?

A. I do not. I have chewed paraffin. I have seen numbers of other people who have chewed paraffin half a day, day after day, and undoubtedly swallowed particles that were more than 100 milligrams, without any ill effects.

The Master: Q. Would you recommend its presence in milk?

A. It would be a foreign body in milk. It would
2079 not conform to the Pure Food Act, if it was there to add bulk or weight to milk. In a receptacle like this, the paraffin that would come off would be extremely small. If I should crush one of these corners, the particles under the microscope would probably be not larger than six times the size of a blood cell, which would not hurt anybody in swallowing it. There is no place on this carton where one piece would come off of the size of a 100 milligrams.

Q. You would not find any objection to milk because it contained paraffin?

A. In what quantities? It would not be harmful to the individual, no, sir.

Q. In any quantity would you find any objection to milk, if it contained paraffin?

A. If the paraffin were of the size of peanuts or marbles, I would not want to drink milk containing paraffin like that, no, sir, but it would not be ascertained in milk any more than the chocolate would in chocolate milk.

Q. Let us assume a little different case. Let us assume you have a person with colitis or with diarrhea, a person with a sensitive bowel, either adult or infant. Would you say that the presence of paraffin in the milk might present a health problem?

2080 A. If it was in large particles, several grains in size, and a person had an inflamed bowel, it might act as an irritant, but such particles I cannot conceive of coming off from a parcel or package such as has been exhibited to me in this court room.

Does that answer your question?

Mr. Rall: Q. Doctor, I forgot one question on the matter of your experience. Are you a member or have you been a member of any professional societies or organizations?

A. Yes. I am a member of the American Chemical Society, Chicago Chemical Society, American Public Health Association, Illinois Medical Society, Chicago Medical Society, American Medical Association. I guess that is all.

Q. In what types of publications have your articles that you referred to been printed?

A. They appeared in Journals of Public Health, American Medical Journal. They appeared in Medical Record, Michigan State Medical Society Journal, India a State Medical Journal, the Journal of Industrial Medicine.

Q. You were requested to appear here by Mr. Fred Gariepy, is that correct?

A. Yes.

2081 Q. You never saw Mr. Gariepy or me before today?

A. No, sir.

Q. And you have conferred with me before your testimony?

A. Yes, sir.

Q. And you expect to be compensated for your consultation and for your appearance here?

A. I do.

Mr. Rall: You may cross examine.

The Master: There is one more question.

Q. I mentioned the case of an irritated or sensitive bowel. Let us take the case of a diseased gall bladder or liver or some other organ which has to do with digestion. Would you say the presence of paraffin would make any difference?

A. Absolutely not, because the paraffin would be elimi-

nated by the gastro-intestinal tract. Not being soluble, it would not get to the liver, which is the filter of the human body, nor to the gall bladder. It would not cause an irritation in either instance.

Q. Would it impose any work upon the activities of those organs?

A. No, sir, it would not, because nothing is needed to digest this piece of paraffin. It is not digested by the
2082 various enzymes and juices that are present in the stomach and the gastro-intestinal tract, including the duodenum, ilium and colon. Those are just subdivisions of the gastro-intestinal tract. With your stomach there you have a complete gastro-intestinal tract. Starting with your mouth and going to your stomach and running down to the rectum, you have a complete G I tract.

Q. Does raw milk contain any bacteria?

A. Yes, sir, it does. I have seen it in the city of Chicago, when I was in the Health Department, contain many millions of organisms.

Q. Would you say that bacteria from the milk adhere to particles of paraffin in the milk?

A. If that particle of paraffin contained protein or other substances found in the milk, yes; it could grow around the protein, just the same as it could grow on the edge of a bottle.

Q. Let us assume that the bacteria are already grown. Do you think—

A. Paraffin would be an un-nutrient medium and therefore would not offer a suitable food for bacteria. In other words, bacteria would not grow readily on paraffin, unless this paraffin was surrounded by food elements which are contained in milk, like lactose, protein, fats, salts.
2083 Milk affords a suitable medium for bacteria to grow, at a suitable temperature.

Q. Let us assume this: The bacteria do not grow as you describe, let us say, but may, nevertheless be in the paraffin.

A. Well, they could not be in the paraffin, unless the paraffin had been rolled around in some putrid material, because the bacteria would not penetrate the paraffin.

Q. You say the bacteria do not penetrate paraffin?

A. It would not penetrate paraffin. It would not grow in it. It has no nutrient in it at all.

Q. Could not bacteria go through the paraffin?

A. No, it could not.

Q. From the milk into the wall of the container and back again?

A. No. You look at your home, as the Mrs. cans jams and jellies, and you have an observation to show why paraffin is used for the cappings of these bottles, because they prevent bacteria and yeasts entering the jams and jellies. They can light on the outside and they will never go through.

Q. Your opinion then is that bacteria do not penetrate paraffin?

A. That is right, they do not penetrate paraffin.

Q. And if there are any bacteria in the wall of
2084 these paper containers, they cannot get into the milk through the paraffin?

A. That is right.

Q. And vice versa—

A. They would not get out into the—

Q. And vice versa, the bacteria from the milk could not get into the wall of the container?

A. Unless there was a break in the paraffin. Then they could.

Mr. Rall: Q. In the hypothetical question, Plaintiff's Exhibit 91 was referred to. I want you to assume for the purpose of this next question that the offset ink on the inside of the hypothetical carton was even greater in amount than that which you see on Plaintiff's Exhibit 91, considering the amount of ink on the outside of the carton and assuming that the inside of the carton was offset with even more of the same type of ink than appears on it. Would that change your opinion as to whether or not the presence of that offset presented a health hazard?

A. No, it would not.

Q. Why?

A. Because, for the reasons stated, you have an in-
soluble compound here, due to the oxidation of the
2085 linseed oil and the formation of an insoluble lead compound, or, if it happens to be manganese, the same applies, which is insoluble in water and which is insoluble in milk.

Q. Would the quantity of lead, assuming as much as 35 per cent of lead in the ink, which could, in your opinion, be offset upon the inside of such a carton, would such an amount, in your opinion, be sufficient to cause lead intoxication?

A. It would not.

Mr. Schaefer: I object to that, for the reason that the witness is not qualified to express an opinion as to how great an offset there may be. The question calls for the witness' opinion on that point.

The Master: I will let it stand. You may cross examine. It will go to the weight of his testimony.

Mr. Rall: Without putting all of these things in the record, I am frank to say that I want the worst case of offset that counsel can find or describe. I am unable to know exactly how to describe it in words.

The Master: I would like to ask a question that may perhaps throw some light on the amount of offset.

Mr. Rall: Yes.

The Master: Q. As I understand you, doctor,
2086 the lead in the ink would not be soluble in the milk for two reasons. One is that you have an oxidation film and the other is that you have a paraffin film.

A. That is right.

Q. And you say that ink when it dries just takes this oxidation film?

A. It forms a film, due to the oxidation of the linseed oil and the ester gums which might be in this particular preparation.

Q. If that is true as to the offset, wouldn't it also be true as to the face of these containers, where you have the full printing?

A. Yes. I would be willing to drink milk day after day with the ink on the inside of the package and have that milk seventy-two hours old.

Q. That is what I am getting at.

A. Yes, sir. I would absolutely not be afraid to drink any milk in a container like that.

The Master: Then it does not make any difference, Mr. Rall, how heavy the offset is.

Mr. Rall: In my humble way that is what I was trying to describe, and I did not do a very good job of it.

The Master: In other words, the doctor says it does not make any difference whether you have merely or whether you have the full printing on the inside of the con-
2087 tainer.

Mr. Rall: Yes.

Q. Now, doctor, in answer to the first hypothetical question you stated that milk kept under the conditions described in the hypothetical question for ninety-six hours,

did not, in your opinion, present a health hazard. Would that also be true—

A. As to lead.

Q. As to lead, yes.

A. Because in ninety-six hours the bacterial count is several million.

Q. But I was referring only to the lead.

A. Kept in an ice box, then it becomes a health hazard, because of the increase in the bacterial count.

Q. But what relationship does the time have in the answer to the question as concerns the possibility of lead poisoning?

A. With this film, nothing.

Q. So your answer was an answer to what you consider an extreme case?

A. Yes.

Q. And would include and cover—

A. With the one proviso that after ninety-six hours there are no defects in this paraffin that would loosen the paper. Suppose this was folded inside. If it would
2088 loosen all of this and the person would get the lead into his system mechanically, then he might show some signs of intoxication, if he got all of the lead from this paint at one dose. We do not believe that would be possible, or I do not.

The Master: May I ask him another question here?

Mr. Rall: That is all right. He is here for that purpose, Master.

The Master: Q. You say that the paraffin does not permit the passage of bacteria from the milk into the wall of the container, that it prevents it?

A. Yes, sir.

Q. And it does not, by the same token, permit the passage of any moisture or any of the milk into the wall of the container, is that correct?

A. That is right. It protects it.

Q. Then you would say that the wall of the container is non-absorbent?

A. It is rendered impervious by the coating of paraffin. That is the purpose of it.

Q. That is your opinion?

A. Yes. Any defects in the paraffin, however, would allow moisture to get through and would undermine that paraffin.

Q. Does this ink have any odor?

2089 A. When it is being made, yes, it would have an odor, but there is very little odor to any ink, unless it has got a preservative like phenol. Take your writing fluid, like the fluid the court reporter is using here; that probably has got phenol in it, to preserve it. That type of ink does not require the skill of manufacture that this type does. That kind of ink will run. I can put my hand on this and it will make a splurge. I can rub this and there will be no splurge, because there is a film on it. That, under the miscroscope, looks like a thousand little dots.

Q. You mean the court reporter's ink?

A. Yes, the court reporter's ink. If I put it under a microscope, as I have done for many years, it looks like millions of little dots. This will not have that appearance.

Q. Referring to the ink on the container?

A. Yes.

Q. This ink on the container you say has no smell whatever?

A. Yes, there is an odor. When you have these cartons piled up in six foot piles in the printing shop, there is somewhat of an odor, due to the pigments, but as it is here, there is no odor at all.

2090 Q. Would you say that if a container is freshly printed and shortly thereafter sealed and made into a form of container such as is shown here, and if the printing were on the inside of such a container, would you say that some of the ink odor might get into the milk?

A. No, that is very small. The only way you smell that ink odor is where there are big piles of these lithographs on the floor of the printing plant. You can take a large pack, like he has at hand there, and there would be no odor at all. But, freshly printed, yes, there is an odor.

Q. Have you performed any experiments to ascertain whether paraffin will permit the passage of bacteria?

A. Well, I have not performed any experiments to show that paraffin will permit the passage of bacteria through a package like this, no, but I know that is why it is used, because it does not permit the passage of yeasts and bacteria. That is common household knowledge. That is why that is used.

Q. Is that also your medical knowledge?

A. Oh, yes. It gives a coating that bacteria will not penetrate.

The Master: Anything more, Mr. Rall?

Mr. Rall: No.

2091 The Master: We will have a recess of a few minutes, then.

Mr. Schaefer: This is off the record. It is now 12:00 o'clock noon.

(Discussion off the record.)

The Master: We will recess until 1:30, in this room.

(Whereupon a recess was taken to 1:30 o'clock p. m. of the same day, Thursday, October 26, 1939.)

2092 • • (Caption) • •

Thursday, October 26, 1939,
1:30 o'clock P. M.

Met pursuant to recess.

Present: Same as before.

The Master: You may proceed.

Mr. Rall: While we are waiting for the witness, there are some exhibits which we want to offer that we might consider. Mr. Horan and I went over the list of exhibits yesterday.

Plaintiff's Exhibit 42, being a picture of a soaker bottle washer, which was identified at Page 487 of the transcript, simply to show the type of machine the witness was discussing, was not offered in evidence, and we now desire to offer it.

Mr. Schaefer: I have no objection.

The Master: It may be received.

2093 (Said photograph of soaker bottle washer so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT NO. 42 and is attached hereto and made a part hereof.)

Mr. Rall: Plaintiff's Exhibit 47-A was included in a general offer, identified at Page 946 of the transcript, but was omitted in the list of exhibits received at Page 1025. We re-offer that, to correct the record.

The Master: Any objection?

Mr. Schaefer: No.

The Master: It may be received.

(Said document so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 47-A and is attached hereto and made a part hereof.)

Mr. Rall: Plaintiff's Exhibit 57, referred to by Doctor Prucha, was identified at Page 988 of the transcript, but was erroneously omitted in the offer of the exhibits at Page 1025 of the transcript. We would like to offer that at this time.

The Master: Any objection?

Mr. Schaefer: No objection.

The Master: It may be received.

(Said document so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 57, and is attached hereto and made a part hereof.)

2094 Mr. Rall: Plaintiff's Exhibit 58 was identified at Page 990 of the transcript, but was erroneously omitted from the offer of exhibits on Page 1025 of the transcript. We desire to offer that.

The Master: Any objection?

Mr. Schaefer: No.

The Master: It may be received.

(Said document so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 58, and is attached hereto and made a part hereof.)

Mr. Rall: Apparently there was no exhibit described as Plaintiff's Exhibit 82, but the transcript at page 1369, in connection with the offer of exhibits, refers to Exhibit 82, so it will be understood that the exhibits should have ended at 81 in that offer, instead of 82.

Mr. Schaefer: Is there an exhibit 82 in the record at all?

Mr. Rall: There is not.

Plaintiff's Exhibit 83, identified on cross-examination by Doctor Lloyd Arnold, is a letter from Doctor Arnold to George D. Scott, dated December 17, 1937. We offer that in evidence. It was identified at page 1877 of the transcript.

The Master: Any objection to that?

2095 Mr. Schaefer: No, sir.

The Master: It may be received.

(Said letter from Doctor Lloyd Arnold to George D. Scott, dated December 17, 1937, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 83, and is attached hereto and made a part hereof.)

Mr. Rall: Plaintiff's Exhibit 84 is a two-page original letter of Doctor Lloyd Arnold to Mr. George Scott, dated December 9th, 1937, a special delivery envelope, and a purported carbon copy of a letter from Doctor Arnold to Doctor Thomas Parran, Surgeon-General, dated December

9th, 1937, identified by Doctor Arnold on his cross-examination.

The Master: Any objection?

Mr. Schaefer: No objection.

The Master: It may be received.

(Said letter from Doctor Lloyd Arnold to Mr. George Scott, dated December 9, 1937, special delivery envelope and carbon copy of letter from Doctor Arnold to Doctor Thomas Parran, dated December 9, 1937, so offered and received in evidence, were marked PLAINTIFF'S EXHIBIT 84 and are attached hereto and made a part hereof.)

2096 Mr. Rall: Plaintiff's Exhibit 85, a one page letter, dated November 12, 1937, from A. W. Fuchs, Senior Sanitary Engineer, to S. E. Dean, Jr., was identified by Doctor Arnold on cross-examination, at page 1888. I now offer it.

The Master: It may be received.

(Said letter dated November 12, 1937, from A. W. Fuchs to S. E. Dean, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 85, and is attached hereto and made a part hereof.)

Mr. Rall: Plaintiff's Exhibit 86 is a photostat of a letter dated November 26, 1937, from Leslie C. Frank, Senior Sanitary Engineer, to S. E. Dean, Jr., identified at Page 1888, is offered in evidence.

The Master: Any objection?

Mr. Schaefer: No objection.

The Master: It may be received.

(Said photostat of letter, dated November 26, 1937, from Leslie C. Frank to S. E. Dean, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 86 and is attached hereto and made a part hereof.)

Mr. Rall: Plaintiff's Exhibit 87 is a one page letter dated February 7th, 1938, from Doctor Lloyd Arnold

2097 to George D. Scott, identified at page 1951 of the transcript.

The Master: Any objection?

Mr. Schaefer: No objection.

The Master: It may be received.

(Said letter dated February 7, 1938, from Doctor Lloyd Arnold to George D. Scott, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 87 and is attached hereto and made a part hereof.)

Mr. Rall: Plaintiff's Exhibit 88 is not offered.

Plaintiff's Exhibit 89 is a copy of a letter dated October

6th, 1939, from Walter N. Dashiell, Associate Public Health Engineer, United States Public Health Service, to Doctor Herman N. Bundensen, to which he attached four typewritten sheets, dated October 7th, 1939, entitled, "Section 10 as it will appear in the 1939 printed Public Health Service Milk Code," said four sheets being identical with the text of pages 2, 3, 4, and 5 of Defendants' Exhibit 29, which is already in evidence. By agreement, the four pages of this exhibit already included in the record as part of Defendants' Exhibit 29 are omitted.

Mr. Schaefer: That is agreeable.

2098 The Master: Exhibit 89 is received.

(Said letter dated October 6th, 1939, from Walter N. Dashiell to Doctor Herman N. Bundesen, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT NO. 89 and is attached hereto and made a part hereof.).

Mr. Schaefer: I have two documents which I want to offer, and that will straighten out this portion of the record and we will have it all in one place.

I want to offer Defendants' Exhibit 7, which was identified by Doctor Prucha while he was testifying and which is a table showing the reports of certain experiments performed by him. It was overlooked at the time the other exhibits identified on that day were offered in evidence.

Mr. Rall: No objection.

The Master: It may be received.

(Said table identified by Doctor Prucha so offered and received in evidence, was marked DEFENDANTS' EXHIBIT NO. 7, and is attached hereto and made a part hereof.)

Mr. Schaefer: The other document which I would like to take up is Plaintiff's Exhibit 88, which was identified at the last hearing, and referred to by counsel for the plaintiff in examining certain of the witnesses who tes-

2099 tified on that day. That document was a report of certain proceedings taken by the Board of Health on May 15th, 1939. I have here an excerpt from the minutes of the Board of Health on that day, which show the action of the Board with respect to that matter, and I would like to have that marked for identification and received in evidence as Defendants' Exhibit 31. The plaintiff has not seen fit to offer its Exhibit 88.

The Master: Do you object to this, Mr. Rall?

Mr. Gariepy: Yes.

Mr. Rall: Unless we can get an agreement as to who was present, so we can make the record in that respect complete.

The Master: You have already testified to this, haven't you, as to who was present?

Mr. Rall: No. Doctor Bundesen referred to the minutes, but did not say who was present.

Mr. Gariepy: Let us find out who was there.

The Master: What is this supposed to be?

Mr. Schaefer: That is action taken by the Board of Health in respect to—

The Master: What is it, minutes or what?

Mr. Schaefer: Those are minutes of the Board of Health, yes, sir. That is what I stated at the out-
2100 set. These are minutes of the Board of Health of a meeting held on that day.

Mr. Rall: Our objection is that it is not complete, but that may be obviated by his later information.

Mr. Gariepy: Showing who was present, to make it complete.

The Master: Subject to putting in the facts as to who were present—

Mr. Rall: And the vote on the resolution.

The Master: (Continuing.) —and the vote on the resolution, the document may be received as Defendants' Exhibit 31.

(Said excerpts of minutes of Board of Health meeting, held on May 15, 1939, so offered and received in evidence, was marked DEFENDANTS' EXHIBIT 31, and is attached hereto and made a part hereof.)

Mr. Schaefer: It is stipulated that at the meeting of the Board of Health on May 15th, 1939, all of the members of the Board of Health were present, except Doctor Bundesen, and all present voted in favor of the resolution.

The Master: How about these cartons that were identified this morning? Do you want to put those in?

2101 Mr. Rall: We will offer in evidence Plaintiff's Exhibit 91 the green printed carton referred to in Doctor McNally's testimony.

The Master: Is that the only one?

Mr. Rall: Yes.

The Master: It may be received.

(Said green printed carton so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 91, and is attached hereto and made a part hereof.)

Mr. Rall: Mr. Reporter, will you mark that Plaintiff's Exhibit 92 for identification?

(The document referred to was thereupon marked by the reporter Plaintiff's Exhibit No. 92, for identification.)

Mr. Rall: I offer in evidence Plaintiff's Exhibit 92, an original one page letter, dated September 16, 1939, from A. W. Fuchs to George Scott.

The Master: A. W. Fuchs is of the United States Public Health Service?

Mr. Rall: Yes.

The Master: And Mr. Scott is sales manager of the Ex-Cell-O Corporation, the Pure-Pak division?

Mr. Rall: Right.

The Master: It may be received.

2102 (Said letter from A. W. Fuchs to George Scott, dated September 16, 1939, so offered and received in evidence, was marked PLAINTIFF'S EXHIBIT 92 and is attached hereto and made a part hereof.)

The Master: Are you ready for the witness now?

Mr. Schaefer: Yes.

Mr. Rall: There is one question that I would like to ask before the cross examination.

WILLIAM D. McNALLY, a witness called by the Plaintiff, in rebuttal, having been heretofore duly sworn, resumed the stand and testified further as follows:

Direct Examination (Continued) by Mr. Rall.

Q. We referred this morning, doctor, to milligrams of paraffin. Can you give the Master some equivalent as to describing what a milligram of paraffin is?

A. Yes, I can tell you what a grain is in milligrams and give the English picture of how the grain and milligram came into existence.

The grain is the average weight of a well dried kernel of wheat. That was our early English system of desig-

2103 nating weights. As this measure was transposed into the metric system or the French system, we then began to use grams and fractions of a gram. A gram is 15.45 grains. A grain is .0645 grams. So if you can picture a well dried kernel of wheat, you have the picture of a grain which is 64.5 milligrams.

Q. Is that the measurment by weight?

A. That is the measurement by weight, given in the United States Pharmacopoeia, National Formulary, United States Dispensary, and a recognized measure used by the pharmacists and the practicing physician.

Q. About how large would a piece of paraffin of 107 milligrams be?

A. It would be a little larger than a grain of wheat.

Mr. Rall: That is all.

Cross-Examination by Mr. Schaefer.

Q. Doctor, what do you mean by a hazard to health?

A. Anything that would cause injury to that particular individual's well being.

Q. Is lead taken into the human body through the mouth beneficial to health?

A. No, sir, it is not. In small quantities it would have no effect.

2104 Q. Just answer the questions that I ask you, doctor. You have testified a good deal and you understand. So just answer the questions that are put to you. Does milk contain lead?

A. Yes, sir, it does.

Q. Does milk, fresh fluid milk as it comes from the cow, contain lead?

A. It contains lead as I have examined it from glass containers. I have never examined it as it came from the udder of a cow and put into pyrex bottles.

Q. Pyrex what?

A. Pyrex bottles, which are lead-free. They are glass containers which are lead-free.

Q. How much lead does milk contain?

A. That varies.

Q. With what?

A. With the length of time that the milk has been in that container, with the type of food that that—

Q. What container, doctor?

A. Glass container.

Q. Are you saying that the lead gets into the milk from the glass container?

A. I believe so, yes, sir. I can take water and put it in a glass bottle, distilled water, and that water after a number of days shows traces of lead.

2105 Q. What have you done with your glass bottle before you put the water in it?

A. It has been washed out with distilled water first.

Q. Rinsed out with distilled water?

A. Rinsed out with distilled water, yes, sir.

Q. That is the only treatment that you gave it?

A. Yes, that is all.

Q. Where was it before it was rinsed out?

A. I couldn't tell you that. It was probably around the laboratory for weeks or so before it was rinsed out or it may have been one that was just used a day or two before, with milk contained in it and then used for this experiment.

Q. How would lead get on to the glass milk bottle?

A. Lead is a substance that is found in all cheaper forms of commercial glass. It is not found in the pyrex or chemical glass. It is and in glazes, in chemical work, in enameled ware.

Q. Is glass porous, doctor?

A. No, it is not, in the usual sense of the word, of course.

Q. Would you explain how the lead that is in the glass gets inside of—

A. That is a matter of solvent action. The glass 2106 is slightly alkali.

Q. Wait until I finish, doctor, please. Will you read the question so far, Mr. Golding?

(Mr. Schaefer's last question was read as recorded.)

Mr. Schaefer: Q. (Continuing.) —gets into the liquid which is placed in the glass bottle?

A. The glass as it is fabricated into bottles contains lead, and water or other things take up this lead in traces of definite amounts that we can estimate in milligrams.

Q. Now, after the bottle has once been rinsed, will the liquid put into the bottle continue to take up lead from the bottle?

A. Yes, it will continue to take up lead.

Q. Where will that lead come from?

A. It comes from the inside of the coating of the glass. There is a little silicate formed there.

Q. How does it get out?

A. It is a sodium silicate that breaks up and liberates the lead. Probably some lead silicate with the sodium silicate.

Q. What do you mean by a lead silicate?
A. The lead is there. We put lead in glass. We put manganese in glass.
2107 Q. No, I want to know what a lead silicate is.
A. It forms with the silicon oxide when it fuses.
Q. What does a lead silicate look like, doctor?
A. White.
Q. Is it visible to the naked eye?
A. In the form of the amount there, it is not visible. It is transparent.
Q. It is transparent?
A. It is transparent. It is just like your glass, part of the structure of that glass. Sodium silicate is water-white also and in thin portions it would not be discernible to the eye, until it is dry, but if it is fused into glass you would not notice it at all.
Q. What tests have you employed to determine the presence of lead in glass bottles?
A. The Fairhall method.
Q. What is that?
A. And I have used the dithizone method.
Q. Describe that method.
A. Fairhall is the method I have used in reporting on lead cases in court.
Q. Will you describe that method?
A. Yes, I will be glad to go into it in detail.
Mr. Rall: How do you spell the other method?
2108 The Witness: The other method is the dithizone method. That is the colormetric method.
We will start with 1000 cc. of water or urine. Let us start with urine. Make it more difficult. To this 1000 cc. of urine in a silica dish, fused silica dish, we put 15 cc. of nitric acid. Evaporate this to dryness and ash it.
The nitric acid oxidizes the organic matter in the urea and sometimes goes off with a flash, due to sudden combustion of the organic matter.
Then you take it up with distilled water, after it is cooled. Add hydrochloric acid and tartaric acid, so if there are phosphates present the phosphates will not interfere with the lead determination. It will break up any calcium phosphates that might be present.
The acid is completely neutralized, after it has been filtered from this incineration process. It is filtered into an Erlenmeyer flask and neutralized with sodium hydroxide. To it there is added an indicator, such as methyl orange.

We now pass in hydrogen sulphide, this gas being obtained from sulphide of iron, to which 1 to 7 sulphuric acid is added. That is dilute sulphuric acid.

2109 Before it is passed into this solution, while we are trying to find out whether lead is present, it is washed through water and passed into the unknown solution.

The lead sulphide will precipitate. It may be in very small quantities so that you can hardly see it. Any iron that is there will also be taken down as a sulphide.

This is filtered off through a filter paper, washed with warm water, and dissolved and washed through into another Erlenmeyer, by means of nitric acid, 1 to 1.

The nitric acid is now boiled, to free this second filtrate from hydrogen sulphide.

It is then taken up with more water, usually 50 cc., neutralized again with sodium hydroxide, until it is alkaline.

It is then acidified with strong acetic acid, and at this point one-half cc. of a 10 per cent potassium chromate, normal chromate, is added.

This solution is now boiled for several minutes, covered and allowed to stand over night, so that the lead will have an opportunity to be precipitated as lead chromate, a difficultly soluble substance.

2110 This is now filtered off through a very small filter paper, washed with warm water, and when found to be free from chromate by using dithizone solution we add hydrochloric acid, 5 to 10 cc. of 1 and 1 strength, washing the material into a third clean Erlenmeyer flask.

To this is added 1 cc. of a 20 per cent potassium iodide solution, also a few drops of hydrochloric acid. In the presence of lead a blue color will be obtained.

This is now titrated with an N/200 normal solution of sodium thiosulphate, and a blank is run using all of these re-agents as enumerated above, and the blank is subtracted from any titration that we may obtain in the unknown.

The Master: Off the record, please.

(Discussion off the record.)

Mr. Schaefer: Q. When you get through, what determination do you have?

A. The determination of the lead.

Q. In what?

A. In that sample of water.

Q. In that sample of urine you started out with.

The Master: Just a minute.

Mr. Schaefer: Will you read the question that I
2111 asked the witness? It is quite aways back.

(The record was read as follows:

"Q. What tests have you employed to determine the presence of lead in glass bottles?

"A. The Fairhall method.

"Q. What is that?

"A. And I have used the dithizone method.

"Q. Will you describe that method?")

Mr. Schaefer: Now I move the answer be stricken.

The Master: He is telling you what he did.

Mr. Schaefer: That isn't what I asked him. What I am asking the witness is how he determined the presence of lead in glass bottles. He is telling me how he determines the presence of lead in urine.

The Master: Do you have any different answer than what you stated, doctor?

The Witness: I stated what I thought was a proper answer. If the attorney, young attorney here, will just clarify what he wants—

Mr. Schaefer: Let us just cut that out. If the Master please, I resent that.

The Master: You don't have to tell us whether the attorney is young or old. You can answer the question.

The Witness: He had it read to him, sir. Why have it repeated?

2112 The Master: You have no right as a witness to chide or take the lawyer to task. Now, you can just answer the question. What is the question now? You asked him how he determined the presence of lead in glass bottles?

Mr. Schaefer: That is right.

The Master: Now, is the answer that you gave the answer you would give to that question?

The Witness: The answer is exactly the same. The procedure would be the same.

Mr. Schaefer: Q. Now, applying that—

A. I have not finished yet. Do you want me to finish it?

Q. Applying that procedure, doctor, what you determine is the lead content in the material which is placed in the bottle, is that correct?

Mr. Rall: I am going to object. If the witness is not permitted to finish the answer to the question, which was

for him to describe the method, counsel ought not to be permitted to proceed, unless he withdraws the whole question.

The Master: Well, let the record stand as it is made now. What is the question now?

(Mr. Schaefer's last question was read as above recorded.)

2113 The Witness: A. That is right.

Mr. Schaefer: Q. Now, what I want to know, doctor, is how you determine the lead which you have described as being contributed from the glass bottle to the liquid placed in that bottle.

A. Well, the same method, using the same chemical procedure.

Q. You have said that by that procedure you determine the amount of lead in the material placed in the bottle?

A. Yes.

Q. Now, how do you determine what percentage of that lead came from the bottle, if any?

A. By taking this same unknown and evaporating it in a platinum dish or in a silica dish which is free from lead, and running that as a blank.

Q. When did you perform such tests with respect to glass milk bottles?

A. I have been doing that for years and years.

Q. For what purpose?

A. Determining the lead content of foods and foods stored in glass.

Q. What I am interested in now, doctor—and this is all I am interested in—is the contribution of the lead

2114 from glass bottles to the liquids placed in those bottles. That is all I am interested in.

A. I have so answered you.

Q. Now, what tests have you performed to determine what amount of lead, if any, is contributed from glass milk bottles to the contents of those bottles?

A. Applying this same procedure which I have just given you.

Q. When did you perform those tests?

A. I have performed them off and on for the last twelve or fifteen years.

Q. And for what purpose?

A. To determine blanks on samples that came in for

the determination of lead. I not only used milk bottles, but used gallon bottles, brown bottles.

Q. As I understand you, doctor—perhaps we do not understand one another—as I understand you, you are saying that what you have done over a period of years was done in an effort to determine the lead contact of certain substances?

A. That were stored in certain kinds of receptacles.

Q. And specifically glass milk bottles?

A. Well, I have had glass milk bottles as one of them.

2115 Q. I am interested just in glass milk bottles.

A. Yes, I see.

Q. And your purpose in doing that was to determine how much lead was contributed to the milk from the glass milk bottle?

A. Yes. Because I got samples of urine from glass milk bottles and then I found lead in them, and then I would have to run a blank with distilled water to see how much came from the bottle itself.

Q. But you don't know what was done with the bottle before the urine was put into it, do you?

A. No, I do not.

The Master: Q. Have you done that more than once, doctor?

A. Oh, yes, I have done that repeatedly.

Mr. Schaefer: Q. Now, doctor, I want to know what tests you have performed to determine whether or not once the bottle is rinsed out it continues—rinsed out so that the liquid in the bottle as it comes from the bottle is entirely free of lead—what tests have you then performed to determine whether or not another liquid not containing lead will pick up lead from the glass bottle?

A. I was only interested possibly in two or three different fields. I was not interested to see whether
2116 sodium hydroxide in milk bottles would pick up more lead, if that is what you are referring to.

Q. No, that is not what I am referring to at all. That question was perhaps not clear. What I want to know is how many times you have prepared a glass milk bottle so that it was free of lead.

A. Never could do that.

Q. What?

A. Never could do that, because it would always have lead.

Q. How many times have you tried to do it?
A. I could not tell you how many times.
Q. Did you ever try to do it?
A. Absolutely.
Q. Now, doctor—
A. What do you think I am telling you here? A bunch of falsehoods? I am a research man.
The Master: No, he is just asking you questions.
The Witness: Yes, but I don't want him to try any insinuations like that.
The Master: He is not making any insinuations.
The Witness: "Did you ever try it?" What do you think I am telling you here?
The Master: He is just asking you and you can tell him.
2117 The Witness: Certainly.
Mr. Schaefer: Now, Mr. Golding, will you read the last question before the witness' most recent outbreak?
(The question referred to was read as follows: "What I want to know is how many times you have prepared a glass milk bottle so that it was free of lead.")
Mr. Schaefer: Q. Now, what I want to know now, doctor, is the procedure that you employed in attempting to prepare a glass milk bottle so that it was free of lead.
A. I could not do that.
The Master: Q. Let us put it this way. You put in some distilled water to wash it out?
A. Yes.
Q. Just how carefully did you wash it?
A. It will always take up some lead again.
Q. The water would?
A. Yes.
Q. How long would you let this distilled water remain in the bottle?
A. As long as the fluid contained in it had been submitted to me. If the fluid had been in there seventy-two hours, then I would run a blank seventy-two hours.
2118 Q. What do you mean by a blank? Just an empty bottle?
A. You take this bottle. Suppose it contains 800 cubic centimeters of urine. I don't know whether all of that lead in that urine came from an individual. Some of it might have come from the glass container. That is not only milk bottles, but other bottles.
Q. Yes.

A. It will do the same thing. So we allow the same amount of fluid to stay in that container.

Q. Distilled water?

A. From the time the party submitted it to us, and they say this was in this bottle twenty-four hours. Then I am only satisfied with distilled water staying there twenty-four hours, and then I run that right through this process, and it may show a trace and it may show—

Q. The idea is to make a comparison?

A. We have to subtract the amount of lead from this particular container.

Q. Now, the distilled water would not contain any lead?

A. No. It is distilled.

Q. You put that into the glass bottle?

2119 A. That is as free as far as possible.

Q. And you permit that distilled water to remain in the glass bottle the same length of time that the—

A. That the unknown was in that same condition, whether it is a milk bottle or another kind of bottle.

The Master: Does that answer your question?

Mr. Schaefer: Pretty well, yes, sir.

Q. The tests that you have described then or that you have referred to were your control blank tests?

A. That is the blank test. We have to run those on everything that comes in.

Q. I thought you testified on direct examination that everything contained lead. Did I misunderstand you?

A. Practically everything does contain lead, as you say. The water that you are drinking every day has got lead in it. If you drink beer, it has got lead in it. If you drink whisky, it has got lead in it. If you drink wine it has got up to 124 milligrams of lead per liter of wine. So there is hardly a thing that you can touch—oysters, grains, —everything has got lead in it.

Q. Now, this distilled water to which you referred, however, does not have any lead?

A. It does not have any lead that we can deter-
2120 mine by the Fairhall method. Using the dithizone method, which is a more delicate test, it might show the presence of some metal there, because it is frequently distilled from metal. That is why we do not use the dithizone method on metals, because it gives the results from other metals here, like a host of metals, unless it is especially carried out.

Q. That is, you cannot segregate one metal from another?

A. Yes.

Q. I don't know whether I got your figures correct on your direct examination or not, doctor. You said that normal people in the Chicago area eliminated 9/100 of a milligram from a liter of urine?

A. That is the maximum we find in students and other people not engaged in lead industries.

Q. Now, the other figure I was not sure that I got right is this: You said, as I understood you, 1 milligram or .1 of a milligram per liter in urine would indicate—

A. Absorption of lead.

Q. Would indicate absorption of lead?

A. Yes. From one-tenth of a milligram.

Q. Per liter?

A. Per liter of urine, yes.

2121 Q. Then your margin is—

A. Only one hundredth of a milligram, yes. Most of them in this area run near eight hundredths, but occasionally we find one that runs nine hundredths, so we have to use that figure.

Q. Now, will you describe the way these ink offsets to which you referred in your direct examination appear under the microscope?

A. They do not appear like the ink that I said the stenographer is using. Can I have your paper here, Master?

The Master: Yes. Take a plain sheet.

The Witness: Take one liter. There are innumerable little dots. They are all microscopic. Wherever he has taken this pen there is a deposition of pigment, under the microscope. Now, with this other we do not get these fine dots.

The Master: Q. What other?

A. With the linseed oil inks.

Q. Which was used on these containers?

A. Yes. We get these things in little shining particles. They are not little dots. Some of them will be very small, like this, but many of them will be confluent, or where they have run together. So then you get a form
2122 that you consider more of a smear under the microscope than this other would be.

Mr. Schaefer: Q. Regular or irregular?

A. Oh, they are irregular. Some of them are very

fine. Some of them are made of particles one hundred times the size of these small particles. In other words, it would be like a daub of your ink being pressed on there and squashed out, in contradistinction to these little dots here.

Q. Would it be entirely flat under the microscope?

A. No, it is raised.

Q. Raised uniformly?

A. No, it is not.

Q. It is irregular?

A. It is irregular. Anything that is stamped is irregular. Look at your hazor blade and you will see a saw tooth edge on it that will surprise you under the microscope, where as if you look at it with your eye it is perfectly smooth. That is the way it is with ink.

Q. Now, in answering Mr. Rall's question as to the health hazard to a person drinking milk from the hypothetical container which he described to you, you based your answer that there would be no health hazard upon the insolubility of the ink and, hence, upon the im-
2123 possibility of the lead in the ink getting into the milk?

A. On the insolubility of the lead linolate, lead pigment, getting into the milk, yes. You see, it is covered over by this film of linseed oil and it is also covered by a film of your paraffin. Both of these things are insoluble in fresh milk.

Q. Now, let us assume as you did in responding to Mr. Rall's question, that the application of paraffin has not, for some reason, been effective. Then your answer is based entirely on the insolubility of the ink in the milk, is that correct?

A. Yes.

The Master: Q. Which is it? Of the ink or of the lead?

A. The insolubility of the ink, the ink being made of this pigment, whether it is manganese, cobalt or lead.

Q. That is, no part of the ink would be soluble in the—

A. In the fresh milk, no.

Mr. Schaefer: Q. The lead is the pigment, is it not?

A. That is only part of the pigment.

Q. The oil is the vehicle?

A. The oil and the gums are the vehicle and they
2124 usually have a coloring matter in there. Sometimes it is lead chromate or it may be other things that are

used for color. Where it is green or red, they might use an iron. Those are called the pigments.

Q. Now, assume that that offset in the rough, irregular form in which you have described it, gets into the milk by means of handling the container, by means of friction, or by any other means, in insoluble form. Would that be beneficial to the health of the person drinking the milk?

A. From the offset, in the amount you refer to?

Q. Yes.

A. You are talking about the inside, under the worst possible condition, as exhibited here today. I don't think enough lead would come off there, if it was all scraped off, to do any harm.

Q. What I asked you, doctor, was whether or not it was beneficial to health.

A. Lead taken in is not beneficial, in my opinion, in any form. Whether taken in in food, wine or anything else, it is going to be deposited in the bones. It may cause no ill effects at all.

Q. Now, I will ask the other question: Is it disadvantageous to the health of the individual who
2125 drinks that milk?

A. I know of no ill effects coming from people consuming foods containing one hundred or more milligrams, up to four hundred milligrams a day of lead, as is found in our foods, since I have said that all foods would contain some lead.

Mr. Schaefer: Now, will you read the question to the witness?

(Mr. Schaefer's last question was read to the witness as above recorded.)

The Master: Q. Apply to that the amount of lead that may be found in this offset.

A. That would be very much less, from the appearance of the offset on the inside.

Q. Do you have any idea as to the amount of lead if the printing itself were on the inside of the container?

A. No, I have not any idea how much those letters would contain.

Q. Would you say it was up to this one hundred or four hundred milligrams you were just talking about?

A. The whole amount there?

Q. Yes.

A. Could I have one of these and cut it and I
2126 could tell you more. Give me one that is not an exhibit.

(Witness cuts into a carton.)

This is the one that contains the most lead, as I understand, contains 30 per cent of lead.

Q. You mean the ink?

A. The ink contains 30 per cent of lead. I think if all of this ink in here were to be put in a—

Mr. Schaefer: Referring to the printed surface of the container?

The Witness: A. (Continuing.) —platinum dish—

Mr. Rall: Referring to the outside or obverse of a flat blank similar to Plaintiff's Exhibit 91.

Mr. Schaefer: Printed side.

Mr. Rall: Printed side.

The Witness: A. I think this would contain a hundred milligrams, easily, if this were all oxidized. If we could just remove all of these letters as is and subject it to a chemical examination, we could tell. There is quite a little pigment segregated here, although it is a very thin coating. The coating is microscopic in size.

The Master: Q. It is what?

A. The coating is microscopic in size. It is very thin.

Q. All of this ink, or as much of it as could be
2127 rubbed off into the milk, you say would contain less than a milligram of lead?

A. I think it would contain close to a hundred milligrams. It might be a little bit more. The bands are quite heavy on the bottom there and they are wide.

Q. Would you consider that a detrimental to health?

A. No. I could take a hundred milligrams of lead, and probably do, and probably all of us do take several hundred milligrams of lead every day in our food.

Q. Would you say that would be injurious to an infant five months old?

A. Nothing so insoluble as this; I doubt whether it would hurt anybody. It is only when it becomes soluble and enters the blood stream. If you got my definition of a poison this morning, a poison is a substance which, when it enters the blood stream and acts chemically is capable of seriously affecting health or causing death. So this stuff would have to go in solution. I could give you a teaspoon full of barium sulphate and it would not hurt you at all, but if I give you a teaspoon full of barium chloride, another salt, I could kill you. It is the
2128 solubility of these things that makes them act as poisons.

Q. Even though that may not be soluble in the milk, can that become soluble in the system?

A. No, I doubt very much if that would become soluble. I think most of this would be eliminated as a lead salt by the gastro-intestinal tract in the feces.

Q. Let us assume now that this lead in the ink on the container would amount to, say, six hundred milligrams?

A. And it were soluble or insoluble?

Q. No, also insoluble. And it got into the milk and were consumed by a person. Would that lead, six hundred milligrams, or even a thousand milligrams affect the health or be detrimental to the health of that individual?

A. When you get up into large figures like that, yes, because there might be some of this lead—I don't know what form they use, outside of the lead oxide. They may use a litharge. A litharge is slightly soluble in gastric juices and intestinal juices. But the form of the lead in a linseed oil preparation is difficultly soluble, and I think that would be eliminated unchanged.

Q. Even though you have a thousand milligrams?

2129 A. Ninety-eight per cent of it would be eliminated unchanged, because its solubility is only about 2.3 per cent in gastric juices.

Q. Let us assume you had a thousand milligrams in a container of milk and an infant less than five months old should consume some of this milk; would you say that would not hurt the infant in any way?

A. It depends on how much went into solution.

Q. That went into solution in the body?

A. That went into solution in the body, yes, sir.

Q. It would not go into solution in the milk?

A. No, sir.

Q. Then the mere fact it is insoluble in the milk does not indicate that it may not be partially soluble in the gastric juices?

A. No, sir. Some of it might go into solution in the hydrochloric acid and gastric juices in the stomach, which I know does happen, and also in the bile. But in dog experiments, where I used lead acetate, a very soluble substance, I recovered over 94 per cent of the lead found in the urine and stool. Those experiments covered over a year's time. Metabolism cases.

Q. Would you say then, a thousand milligrams of lead contained in this sort of ink, in a container of milk,

2130 and fed to a baby less than five months old, might or might not cause injury?

A. It might, yes. A thousand milligrams is a lot of stuff. That is one gram or 15.45 grains. It has a lot of foreign materials to put into a body of a baby.

Q. But a hundred milligrams, which you say is the amount contained here, would not cause any damage?

A. I don't think that would hurt, because we are taking that much in our food all the time.

Q. But a child?

A. A child is getting that in its dextrose maltose and in the milk it is taking.

The Master: Go ahead, Mr. Schaefer.

Mr. Schaefer: Q. Now, going back a moment, you said that normal people in the Chicago area eliminated nine hundredths milligrams per liter of urine?

The Master: In the weight.

The Witness: A. Nine hundredths of a milligram. .09.

The Master: The weight of the lead in a liter?

Mr. Schaefer: That is what I mean.

The Witness: That is the maximum normal.

Mr. Schaefer: Q. How much would that be in-
2131 creased to eliminate one hundred milligrams of lead?

A. How much would that have to be increased?

Q. Yes.

A. That would have to be increased many thousand fold to get a hundred milligrams. You see, if it is increased ten times we would have nine-tenths milligrams and that would have to be increased ninety-nine times, practically, in order to get a hundred milligrams of lead.

Q. Yes. Now, you had a margin, I understood you to say, of one-hundredth of a milligram between the indication of lead intoxication and the normal amount of lead eliminated in urine?

A. That is right. Anything over nine hundredths. That is the high normal. That begins to show manifestations of lead. But that has to be modified, too. I find people every now and then that have eighteen hundredths, twice that amount, and still do not show any signs of lead intoxication, no lead line, no gastric disturbance and no decrease in the lead count or hemoglobin. So there are exceptions to that.

I had a case just last week where double the amount was found in the urine, and the man was not suffering from lead poisoning. He happened to be suffering from a
2132 dysentery or food poisoning, but he was a painter, so we had to examine him to see if lead was a factor.

Q. But where you get double the normal elimination of

lead, without getting indications of lead intoxication, other indications, the occurrence is rather abnormal?

A. That is abnormal. Anything over .09, or 90 per cent of the cases where it is over .08 would give you that. In my book I give the figure of .08, but we have run a lot since that figure, and I believe now that .09 for Cook County and Chicago is probably the figure.

Q. Now, for a person to get rid of 100 milligrams of lead taken into the system through the mouth would require that volume of lead elimination to be increased substantially, wouldn't it? I think you said ten times.

A. You are figuring on urine, of course. All of that would not be eliminated by the urine. 90 per cent and over of these animals, 94 per cent was all eliminated by the stool.

Q. Doctor, when you testified to your figure of nine hundredths of a milligram per liter, you were not con-
2133 sidering the amount eliminated by the stool either, were you?

A. No, but we know it is eliminated all the same.

Q. So we know that we are comparable.

A. That person could have been taking two hundred milligrams of lead a day and that amount show in the specimen which we are taking into consideration.

Q. Now, doctor, assuming that lead from paper milk containers is taken into the human body in the manner I have described; will the effect be beneficial upon the health of the individual who takes it?

Mr. Rall: I am going to object to that question. There is no evidence here that any lead is taken into the human body from milk containers.

The Master: Overruled. Go ahead and answer.

The Witness: A. In what amount did you state?

Mr. Schaefer: Q. First, in any amount, will it be beneficial?

A. I know of no pathological changes in the human body from the normal consumption of lead from our every day foods.

Q. Translate it. That means—

A. In other words, it means that the lead we are taking in our foods, which would include this milk, does not exert a change in the liver, the kidney, the heart, the lungs,
2134 the stomach or the bowels.

Q. That is, you know of no beneficial effect?

A. I know of no pathological changes seen in the organs of some twelve thousand people whose organs I have

examined, and all of them were taking lead every day into their systems.

Q. Now, the effect of lead on the human body depends, I suppose, quite largely on the quantity taken?

A. On the manner in which it is taken. By the gastro intestinal route the effects are the least. By inhalation the greatest damage is done, because is it inhaled by the individual and does not go through the portal system and is immediately taken up in the blood, and goes to all the organs of the body and is deposited in the bones as basic tricalcium lead phosphate.

Q. And the quantity taken in is an important factor?

A. The quantity taken in is an important factor.

Q. Now, the total quantity of lead in the human body is one of the factors which determines whether or not that person will suffer from lead intoxication, isn't that correct?

A. That person, yes. If that person has absorbed a considerable amount of lead from his daily intake of food,
2135 which contains lead, and then he is subjected to insults of something that contains more lead, he is storing up lead in his bones that some day might come out with a rush and cause illness.

The Master: Q. Provided that this lead is taken in in soluble form?

A. It has to be in soluble form in order to get in the blood stream. It has got to go through the little ventricles and capillaries to get into the blood stream and then it is carried to all parts of the body and finally takes the place of the calcium in the bones and is deposited there as basic phosphate.

Mr. Schaefer: Q. Is an increase in the amount of lead taken into the human body desirable?

A. No. Lead is not a desirable factor, any more than arsenic or manganese. Any metal that does not enter into the metabolism of the human body should not be taken into the system, if we can prevent it, but in the form of food we cannot separate the lead from the food, from our beer, our wine, our drinking water.

Q. Now, doctor, when you determined the presence of lead in glass milk bottles, in what quantity did you find it?

A. That varied from traces, where distilled water
2136 had stood only over night, eighteen to twenty-four hours to water that had stood in similar bottles where 2.12 milligrams of lead were found in a thousand cc. This particular type of bottle was cloudy, showing that water had

acted on it or other things had acted upon the bottle itself. All milk bottles gradually become cloudy, or if water stands in them for some time you can find a ring formed at the top of this water. That not only applies to milk bottles, but other types of bottles. Even our best glassware will get a cloud in it where solutions have stood in it for some time, showing that the water and other substances in these bottles had acted upon the glass. Glass always has some sodium silicate present, and that makes it alkaline, and that alkalinity produced there dissolves out some lead.

Q. From what?

A. Dissolves. The alkalinity of that water from the sodium silicate dissolves out lead.

Q. From what?

A. From the glass itself, in the water.

Q. And the highest you found was what?

A. It was 2.12.

Q. What was the average?

A. Well, the lowest was a trace. If I run thirty
2137 or forty of these I would simply have to add up all of them. I could not give you the average, because I haven't got all of the figures.

Q. What do you mean by a trace? A measurable quantity?

A. No. Where we could not titrate it. But we knew there was a coloration, either by the dithizone method or by the Fairhall method, up to where I titrated enough in the end where two hundred solutions gave me 2.2 milligrams of lead, and that would have to be subtracted from the 1000 cc. of the unknown, in order to arrive at a proper factor.

Q. You do not remember now the average?

A. No, I would not remember it. That has been done over a period of years and I would not have the records back when we were doing that.

Q. Do you know of your own knowledge whether or not paraffined paper containers, like Plaintiff's Exhibit 2, are absorbent?

A. Absorbent in what way?

Q. Absorbent in any way.

A. Absorb anything?

Q. Yes.

A. You mean from the outside or inside?

2138 Q. Let us take from the inside first.

A. That had been thoroughly coated with paraffin?

Q. I didn't ask you that. I asked you about Plaintiff's Exhibit 2. Do you know of your own knowledge?

The Master: I asked him about that this morning.

Mr. Schaefer: Sir?

The Master: I asked him about the absorbent qualities this morning.

Mr. Schaefer: Yes, I know you did.

The Witness: I don't know, because I have not experimented with this particular exhibit.

Mr. Schaefer: Q. Now, is it not a fact, doctor, that any solid substance is undesirable in an inflamed bowel or intestine?

A. Any solid substance that could act as an irritant would be objectionable in a bowel that is undergoing any inflammatory reaction, like a mucus colitis, enteritis or dysentery.

Q. Would you say any solid substance could be irritating? Can any solid substance be irritating?

A Depending on the size. If we introduced flour into a bowel, it would not be irritating to the lower bowel, because it would be acted upon by the digestive juices. We in-
2139 troduce irritants to cover up these inflamed bowels.

We introduce bismuth, sub-nitrate and those things to cover up inflamed bowels, which in itself in large pieces would be irritating, but in the form of impalpable power is not irritating.

Q. Yes.

A. So if your paraffin was in real small particles, it would not irritate any bowel, but in large chunks, yes.

Q. How much are you being paid for testifying here today, doctor?

A. I don't know whether it is material or not.

Mr. Rall: Go right ahead.

The Witness: A. I charge my usual fee, one hundred dollars a day.

Mr. Schaefer: Q. Is that the fee you ordinarly charge?

A. Yes. In some cases I get twice that. Usually it is one hundred dollars a day.

Q. Do you spend a lot of your time testifying?

A. Not as much as I used to.

Q. Have you any idea how many cases you have testified in?

A. Many hundred.

Q. Many thousands?

2140 A. I don't know. Maybe it is thousands.
Mr. Schaefer: That is all.

Redirect Examination by Mr. Rall.

Q. Doctor, when you referred to large chunks of paraffin being irritating, can you give us a more particular description of what you mean?

A. If this one hundred grams that has been referred to was in one chunk—

Q. One hundred milligrams.

A. One hundred milligrams, which would be merely twice the size of a kernel of wheat, in my opinion that would be irritating. If it was in comminuted form, very small particles, no.

Q. You have referred to there being possibly one hundred milligrams or a little more on Plaintiff's Exhibit 91 of solid material in the ink. You were referring to the printed side and not to the inside, is that correct?

A. I was referring to the printed side, yes, knowing that someone had said this contained thirty per cent lead. The reason I know from an examination of the plates that that contained very much lead—I know that that is what
2141 it would be, about what it was. These transfers on plates contain lead, like calcium, bismuth. I have done work along that line.

Q. You say that the total quantity of lead already stored in the body from any source is a factor in the later cause of lead poisoning, if there is an increase?

A. Yes. If a person has a large amount of lead stored up in his bones, he may have no symptoms whatever, but when they use my method of eliminating that lead from the body they sometimes create a case of lead poisoning. Such an occurrence occurred at the Ravenswood Hospital. A young lady came in for an examination, and instead of giving her the ninety grains of potassium iodide, as my method calls for, the nurse gave it to her three days, a beautiful case of lead poisoning, because the lead was drawn out of her bones and thrown into the circulation in massive amounts, and she got a case of typical lead poisoning.

Q. Do infants under the age of one year ordinarily have stored up quantities of lead?

A. Not unless they have been chewing their cribs or

they have been subjected to lead nipples. Those cases
2142 are very rare. They do get it, but it is very rare.

Q. The number of times that a glass milk bottle has been put through the chemical solutions which are used to sterilize it might have an effect on the inner surface of the glass bottle, insofar as releasing lead is concerned, might it not?

Mr. Schaefer: I object to leading the witness, if the Master please.

The Master: Oh, I will let him answer the question.

The Witness: A. Yes, it would, because it offers more surface for the water to impinge on. For instance, if you take that piece of paper in front of you and you wrinkle it up or tear it into minute pieces, you will have a greater surface for water to act upon than if you had it right out flat. The same way with indentations on a bottle. If you punch a lot of holes in that bottle, which is virtually what the chemicals are doing, you have a greater surface for them to act upon.

Mr. Rall: While you were describing the Fairhall procedure, you were interrupted by counsel. Is there considerable more to the procedure?

A. We got down to the point where we were titrating
it, and to complete the method we titrate this with
2143 N/200 sodium thio-sulphate, until the blue color disappears. The blue color is due to the indicators in the iodine, and when we get to the point where there is no further color we subtract our blank from the amount we titrated and multiply that by .3451, which gives us the milligrams of lead in the unknown. That completes it.

Q. And those are the methods which you have used in determining the presence of lead in glass bottles?

A. Yes.

Q. And other food containers?

A. Yes, sir.

Q. You were asked to assume that 100 milligrams of lead, from a paper milk container, got into the milk from the printing. From your experience do you know of any instance of the situation so assumed?

A. I know of no intoxication from the lead from printing in containers such as you have exhibited here.

Q. If Plaintiff's Exhibit 91 were turned inside out, so that all of the printing on the outside of the container were next to the milk and the container was not paraffined, do

you have an opinion whether there would be any lead in the milk, if it were so handled?

2144 A. Yes, I have an opinion.

Q. What is that opinion?

A. I think there would be some lead in that milk.

Q. And in what quantity?

A. It would be very small, but there would be some lead.

Q. If the outside were turned in?

A. Yes.

Q. Would that quantity be within the range that you feel would have no effect on the human body?

A. Yes, it would.

Q. So, in addition to your answer being based on the insolubility of lead in milk, the quantity that might possibly get into the milk is also a factor, is that correct?

A. It always is a factor, yes.

The Master: Q. How would the lead get into the milk in such a situation?

A. That has not been brought out by either side, but I believe it would get in there in this manner; that wherever you have printing and you are handling large quantities of these things, there is a very fine dust gets onto the paper, and if I had my microscope here I could demonstrate that there is some dust coming off of them.

2145 Q. Coming off of the printing?

A. Yes, sir. Some dust coming off of that printing. So the expert cannot say truthfully that there would be no lead in that milk. It would not be from the solubility, but from the dust. If you go into a lithographing plant and see these things piled up—and I have made dust counts in these places—you can see this green powder on the floor, if they haven't swept their place. Or if you take an air sampling, such as I have, you can find that dust in the air where these men are working. When it is in that condition—of course, you are putting that to a very rigid test by putting that in. I would be willing to drink that every day, the way it is, out of these containers, but still there would be some lead in there.

Q. Is that the only way the lead would get into the milk?

A. Yes. It is insoluble in milk. It is insoluble in water, this particular pigment.

Q. Let us see if we get this straight. You said there was an oxidation film over the printing?

A. Yes.

Q. So that would prevent solution of the lead into the milk?

2146 A. Yes

Q. You say, however, there is a dust which might fall into the milk?

A. That would come if we would put it to the most rigid test, which would not do. These things, which are packed together, there is a little friction in here. It is microscopic. If I dusted this all off I might not find anything, because it has been exposed to the air. All you might find is silica, floating from the outside air in here. But there will be some lead come on. Up here there would be practically nothing.

Q. Referring to the offset.

Mr. Rall: Q. Referring to the offset on the inside of Plaintiff's Ehibit 91?

A. No, sir. Because that has been dried, and when that thing is pulled off there is an infinitesimal amount.

The Master: Q. Let us get back to this, doctor. You say, first, there is this oxidation film that would prevent solution of the lead into the milk?

A. That is right.

Q. However, you say there is a dust on the paper which would fall into the milk, without necessarily being in solution in the milk?

2147 A. Yes, but a person will get that if they drink it.

Q. How is that?

A. A person will get it if they drink that milk.

Q. Now then, Mr. Schaefer pointed out that the ink which constitutes the printing is not there in even layers, but may be there in ridges?

A. That is because I said under the microscope it would be discernible to the naked eye.

Q. Those ridges might be worn off a little bit, so as to make this dust, too?

A. Oh, that is so small. That is microscopic. It might be one three-hundredths of an inch.

Q. I mean, it would enter into this, being a source of dust?

A. Yes. Just the fact of rubbing these things, you can create dust, and a man piling that across like that, and he keeps doing that continually, he is going to raise a little dust, so if these things were not shaken down like that, probably they do get dust from the street and things like

that, so there surely would be some lead get into the milk, offhand, in that way, but not the other.

Mr. Rall: Q. And when you refer to it getting in
2148 in that way?

A. I mean if I made a test of that milk, without any previous tests, I would find lead in that milk.

Q. If it was so handled?

A. Yes.

Q. Under the severest tests, you still say there is no problem of health hazard involved?

A. Oh, no. From the way you have explained it to me, there is no health hazard.

Mr. Rall: That is all.

Recross Examination by Mr. Schaefer.

Q. Why would not dust come from the offsets, doctor?

A. That would be so infinitesimally small. This printing here would be—

The Master: The printing on the outside?

A. The printing on the outside would have several thousand times more of lead, expressed in milligrams or fractions of milligrams, then what I could get from here.

Mr. Schaefer: Q. But there would be dust, there might be dust on it?

A. It would be very small, because this is exceedingly small.

2149 Q. Of course, the amount of dust will depend upon the amount of printing, I suppose?

A. Yes. If you took all of the printing from these things and put it in the milk, you would have some lead there.

Q. But apart from the quantity, is there anything in the nature of offset as opposed to the direct printing—

A. No, this offset will be smoother.

Q. I haven't asked you anything yet, doctor. Let me finish my question.

A. Yes.

Q. (Continuing) —that would prevent dust from occurring from the offset?

A. Yes, because the offset is so infinitesimally small.

Q. I said, apart from the quantity.

A. Apart from the quantity?

Q. Yes.

A. No. You can get even pieces of paper from here, if they were not shaken or handled in that form, you would get some little dust.

Q. Then your answer is, apart from the quantity, there is no difference between the offset and the printing?

2150 A. There may be in quantity, yes, in marked quantity.

Q. Yes, but apart from that there is no difference?

A. Yes. Lead could come in, if there was dust on this side of the package, just as well as if I develop it on the other side. Dust will come from there, but not from the solubility. From the dust.

Mr. Schaefer: That is all.

The Master: Anything else?

Mr. Schaefer: No, sir.

The Master: One other question with reference to this distilled water standing in a glass bottle.

Q. You say after a while it might show some lead?

A. Yes.

Q. Is it possible that some of that lead might come through the air?

A. Well, we have the milk bottles all stoppered up and covered up with filter paper. They are plugged with cotton, and then we have a piece of filter paper, 15 centimeters in diameter, making a cap, so there is nothing coming from the air. But the air even in this room contains some lead.

Q. That is what I mean.

A. Yes, the air, every place has some lead in it, more down on the street than up this level.

2151 Q. But in making this experiment you did everything you could to prevent lead from the air coming into it?

A. Yes, because it was all done under the same conditions. The blank was run the same as the other.

The Master: Anything more?

Mr. Rall: No, that is all.

The Master: That is all, doctor.

(Witness excused.)

The Master: Let us have a short recess.

(A short recess was here had, after which the proceedings were resumed as follows:)

The Master: You may proceed.

Mr. Gariepy: Dr. Vaughan.

R. T. VAUGHAN, was called as a witness by the plaintiff, in rebuttal, having been first duly sworn, testified as follows:

Direct Examination by Mr. Gariepy.

Q. State your name?
A. Doctor R. T. Vaughan.
Q. And your address?
A. Cook County Hospital.
Q. You are a licensed physician and surgeon in this state?
2152 A. Yes, I am.
Q. How long have you been such?
A. Since 1904.
Q. What is your position at the Cook County Hospital now?
A. I am attending surgeon and night superintendent.
Q. And you have been there since 1904?
A. Since 1913.
Q. Are you acquainted with the procedures employed at the County Hospital now in cases, pre-operative cases on patients and post-operative cases, with regard to ordinary treatment?
A. Yes.
Q. Are mineral oils used in pre-operative cases?
A. Yes, very frequently.
Q. Is that a customary procedure at the Cook County Hospital?
A. Yes. Many services use that as ordinary preparation for operation. They use mineral oil and enemas, to insure an empty alimentary tract.
Q. How about post-operative treatment?
A. Yes. It is used post-operatively also, especially in rectal complaints, like hemorrhoids and fistulas, so
2153 as to insure a liquid soft non-irritating stool.
Q. How does that mineral oil compare with the commercial paraffin, such as is used on paper containers or food containers, doctor?
A. Well, it is derived from the same source as paraffin and it is essentially of the same chemical make-up.
Q. Does it contain alkali and acids?
A. No. It should be neutral to litmus paper.

Q. Is paraffin used in such cases as bone cavities by the surgeon?

A. Yes. Solid paraffin to fill out bone cavities and aid their granulation. It is used as bone wax.

Q. For building up places?

A. There may be a cavity in the bone and the bone often fills in with new bone, under a protective plug, of which paraffin is the base. Beck's paste and Morhoff-Mositing paste are two commonly used bone pastes, having a paraffin base.

Q. Is liquid paraffin also used in cases of treatment of hernia?

A. No, but solid paraffin is.

Q. How is that used?

A. Hernia is a hole in the belly wall and it is plugged in by injecting liquid paraffin. It is melted up by
2154 heating and injected, and solidifies at the body's temperature.

Q. You also, I think, said it was used in cases of hemorrhoids?

A. The mineral oil is used in cases of hemorrhoids. Mineral oil is a heavy, clear liquid, clear like water, whereas paraffin is a solid.

Q. What is the usual treatment given in cases of bowel obstruction, in diagnosis of bowel obstruction?

A. There is a lot of things given, but mineral oil is used in a diagnostic way. If the mineral oil comes through and appears in the enemas and in the stools, we know obstruction is not complete.

Q. How does this mineral oil compare in quality, doctor, with regard to alkali and acids, with the paraffin that is used on commercial containers, such as this white paraffin?

A. They are both neutral in reaction.

Q. Have you made any inquiry, doctor, with regard to treatment of babies, the history of disease in babies, to ascertain whether there is any case of record wherein babies have been fed that have a diseased or irritated intestinal tract by reason of any paraffin or mineral oil?

A. No. The effect of paraffin is just the opposite.
2155 Paraffin is emulsion. Paraffin, vaseline, mineral oil, are all used as sedatives, as protective agents. A great many protective unguents have a paraffin base.

Q. What about the oil we use in our nose to resist infection?

A. Vaseline has the same base. It is half way between paraffin and mineral oil. White petrolatum and white vaseline that you get is usually made by mixing paraffin with mineral oil and bottling it up and mixing it up.

Q. And that white paraffin is used by the surgeon in what instances, doctor, in treatment?

A. Well, it is used for different purposes. The hard paraffin is used, as I say, to fill out hernial depressions. It used to be used a great deal more than it is now, because it retains a certain fluidity and does not stay in place very well. It is not used now nearly as much as it used to be. It was also used for burns, sprayed on as a liquid, with or without some mild antiseptic, and thus protected the burn from the exterior world. Most services now use tannic acid.

Q. Instead of paraffin?

2156 A. It gives a preparation that is a little heavier and forms a firmer coat than does the paraffin.

The Master: What was that last?

The Witness: Tannic acid. It turns limbs brown.

Mr. Garjepy: Q. Does this white paraffin permit penetration of bacteria, doctor?

A. Permits penetration?

Q. Yes.

A. Well, bacteria won't go through a layer of paraffin, if that is what you mean.

Q. Yes.

A. But bacteria next to the skin will not go out very easily, such as the elimination of pus, paving the way.

Q. It seals it in?

A. It does not seal it in. The fact is paraffin is so pliable that it easily enables secretions to come through. We also use dressings soaked in paraffin, because the pus comes through the mesh quite easily, and then the absorbent dressing put outside of that can be changed without disturbing the surface of the wound. That is what we call paraffin gauze. That is hard paraffin. It has been used for subcutaneous injections, for cosmetic defects, for

2157 dimples and depressed scars and depressed noses. It is injected into the tissues while warm, and the paraffin has to be used at a melting point sufficient low so that it does not produce a burn. It is generaly heated up to about 120. You have got to have paraffin which melts around 120. 130 will burn, although it is a very mild burn.

Q. And these paraffin dressings that you refer to are dressings that are put right next to the open skin, after injury?

A. Right next to the open wound, you mean?

Q. Right next to the open wound.

A. With the skin taken off of it, yes.

Q. Now, the procedures that you refer to, doctor, are employed at the present time by physicians and surgeons at the Cook County Hospital and by the Cook County Hospital?

A. Yes, although I understand most of the services are using tannic acid now in preference to paraffin. During the World War paraffin, a French preparation, known as amprene, was very popular and used on the Western front, before the tannic acid treatment was extended up in Detroit.

Q. The American Medical Association has passed upon the precedures and techniques employed at the Cook
2158 County Hospital, for approval or disapproval, haven't they?

A. They have a book or list of accepted remedies that are approved for use everywhere.

Q. And are these remedies and these procedures and these techniques you refer to generally approved by medical science?

A. Oh, yes. The preparations are in the U. S. Pharmacopoeia, where the U. S. Pharmacopoeia states the uses and values of preparations.

Q. Did you attempt to ascertain from any pediatricians, doctor, with regard to their experience and findings in children under five months old being afflicted in any way by reason of the taking of any paraffin into the intestinal tract?

A. No, I know of no instances of paraffin in the intestinal tract doing any child any harm.

Mr. Gariepy. Cross-examine.

Cross-Examination by Mr. Schaefer.

Q. Now, doctor, this mineral oil to which you testified, which is used in pre-operative and post-operative treatment, is that in liquid form?

A. Yes.

2159 Q. Do you ever use undissolved paraffin in pre-operative or post-operative treatments?

A. No, because you usually use the liquid, because of the greater readiness with which liquid spreads over a surface. Vaseline has been used for the same purposes, but it does not flow quite so easily and most people prefer to take mineral oil to taking vaseline.

Q. Yes.

A. But the chemical reaction and the chemical properties are essentially the same. There is just the difference in melting points.

Q. Now, have you ever heard of administering undissolved paraffin to infants under the age of one year, for any purpose?

A. No. Mineral oil or vaseline would be preferable. The paraffin would not liquify in the body and therefore would not spread over the whole intestinal surface. It would go through as a foreign body.

Q. Are you a pediatrician?

A. No. I am a surgeon.

Q. And do you think yourself competent to testify as an expert with respect to matters of pediatrics?

A. Within limits, because I do pediatric surgery.

2160 Q. But, apart from pediatric surgery, do you consider yourself competent to testify as an expert?

A. I am not a trained pediatrician. Of course, I have had more or less experience with children, but I am not a pediatrician.

Mr. Schaefer: That is all.

Mr. Gariepy: That is all, doctor.

(Witness excused.)

Mr. Gariepy: With the exception of the depositions, everything else is in.

The Master: Do you want to show proofs closed, outside of the introduction of the depositions?

Mr. Gariepy: Yes.

Mr. Ralf: As a matter of fact, at the close of the plaintiff's case in chief we did make an offer of the depositions and they were received, subject to the Master's ruling on the written objections which Mr. Schaefer was to attach.

Mr. Schaefer: That is right.

The Master: Then let the record show proofs closed, with the exception that Mr. Schaefer may present his objections to portions of the depositions or such portions as he may see fit to object to.

Proofs closed.

2161 • • (Caption) • •

Stenographic report of informal conference had at the office of United States Master in Chancery Jacob I. Grossman, Suite 753, United States Court House, Chicago, Illinois, at 11:00 a. m., Saturday, March 9, 1940.

Present:

Mr. Fred A. Gariepy and Mr. Owen Rall, representing the plaintiff;

Mr. Walter V. Schaefer and Mr. Charles P. Horan, representing the defendants.

The Master: I read over the briefs in this matter some time ago and some questions have occurred to me. One thing I have already mentioned to you gentlemen, as to whether this suit in the court at this time may be a little premature. My thought is this:

It seems to be agreed that the subject of milk containers is proper to be included in an ordinance, that health measures concerning milk which affects municipalities gen-
2162 erally first receive the consideration of the United States Public Health Service, that the Public Health Bureau has framed a model ordinance, which has been followed by municipalities generally, and that whenever a change is to be made in general practice concerning milk usually the United States Public Health Service is the first to consider and pass upon the change.

In this matter it appears that the United States Public Health Service has been investigating the subject of paper milk containers for some time and has made suggestions concerning that type of container, and finally the Bureau has made an amendment to its model ordinance.

While this suit was pending the Board of Health of the City of Chicago learned of the amendment, and, following the usual course, promptly recommended to the City Council that the ordinance be amended so as to follow the recommendations of the United States Public Health Service. The City Council Committee has the matter under consideration.

That all seems to be the usual course. The evidence has been introduced in this case, but of course the
2163 Council Committee or the Council itself would be free to consider any kind of evidence, whether it be strictly

admissable in a court or not. There are many considerations entering into the passage of an ordinance which are not strictly admissible in a court proceeding.

The Council Committee has stated that it will defer consideration of this question until after the court has passed upon the matter. I have been wondering whether the correct procedure should not be the reverse, that the Council Committee should be the one to first pass upon this, rather than the Court.

That question in my mind opened up a rather broad field. For instance, we can imagine that over a period of years various questions such as this have been decided by legislative bodies, so that statutes or ordinances may have resolved questions in controversy from time to time by inserting in the legislation a statement that a particular thing or process or something else should be used.

Now, let us imagine that some inventor decides that he has perfected a device or process, or whatever it may be,
which is superior to the thing mentioned in the ordi-
2164 nance. Ordinarily we all know it takes some time for
a new device or process to stand the test before such a thing is adopted generaly. For instance, we recently heard of the magnanimous act of some doctor who said that he had found a medicine which could be put on the teeth to take away all unpleasant sensations attendant upon the dentist grinding the teeth, and he dedicated that discovery to the profession and people generally. I am told that the dentists went after that with considerable enthusiasm, but in a short time they decided that the new thing was not exactly what its inventor promised. I presume he was about as much disappointed as the dentists generally. So I say it takes a little time for a new thing of that sort to stand all of the tests necessary, and it takes some time for it to percolate into legislation.

Now, if every inventor could immediately run into court and demand that the court hold a hearing on his invention and decide that that invention is what he claims it to be, the effect would be that the usual procedure would be
changed and the usual tests to which the thing must be
2165 put before it is generally adopted would not have to
be used any more.

That is just a brief statement of the broad question that is involved. In other words, should legislation be permitted to follow its natural course, or should the courts interfere

and upon the suit of any inventor immediately tell the legislative body that their existing legislation is invalid and virtually mandamus them to pass a new set of regulations, or that the court will simply permit this new device to be used? Should the courts undertake what is essentially a legislative function that early in the game?

I was wondering whether a more accurate statement would be that the ordinance does not yet permit, and that is something that is more in harmony with the actual facts in the case. That is to say, if you discover something new, naturally it would not be the subject of any ordinance and it was never in contemplation at the time the ordinance was passed. The question is whether you are going to give the legislative body an opportunity to permit the use of the new device. And the ordinance does not yet permit, because the legislative body has not had the opportunity in the regular course that I have described to permit the new device.

2166 I have stated this rather generally. I have talked to you both, and you get my general idea. I thought I would ask you that.

In connection with that same subject, this thought occurred to me: Assuming that the courts should hold that this ordinance is too narrow and that these containers should be permitted, can the court order a permit without machinery therefor?

The thought that I have there is that in the existing ordinance there is provision for regulating the use of the glass bottle, namely, there are provisions as to cleaning the bottle and for inspection right along.

Now, if the ordinance is invalid as to plaintiff, does it necessarily follow that a court should say, "Well, you go ahead and use these paper containers, even though there is no system of regulation whatever."?

It may very well be that the particular containers presented in this case may not be subject to objection, but is that an assurance that future containers, manufactured even by the same plaintiff, would be sterile, or essentially sterile, as you put it, or that the conditions under which the bottling is done would remain the same?

2167 In other words, in the case of bottle cleaning there is a continuous regulation. The mere fact that there is an inspection, say, today does not mean that the cleaning process is going to remain exactly the same for a year.

There is a periodical examination, so as to keep them observing the regulations.

No, if the ordinance is invalid as to plaintiff, does it necessarily follow that it is invalid as to glass bottles? That is a question I have in mind also.

There is some suggestion in the brief of the City which gives rise to this question: Does the glass milk bottle, the so-called standard milk bottle, give the purchaser an opportunity to see whether the milk is dirty or not, whether there is any dirt in the bottle? What is there in the ordinance to the effect that the glass milk bottle is not required in order to prevent fraud; in other words, to give the purchaser an opportunity to see what he is getting?

The statement in the brief of the City which gave rise to that was the one about the cream line. A purchaser might look at a glass bottle and see whether there is a
2168 cream line or not. He would also see whether there is dirt in the bottom or something floating around.

Of course, you might say in answer to that, "What about the can of condensed milk? You cannot see what is in that." I heard of a case, or somebody mentioned a case about a can of condensed milk, where they found a foreign body in it, and suit was filed.

Mr. Rall: They found a mouse. That was in the Circuit Court of Appeals.

The Master: That is the case. They sued them. But that goes back to the other question: Is this glass milk bottle something for the benefit of the purchaser, so he can see into the bottle before using it? There might be something else floating around.

Stating specifically the question I first raised, you both seem to agree that this ordinance prohibits the use of paper containers. When I say that, I am passing your contention that the ordinance is broad enough to permit the use of paper containers. But after you pass that first contention, you say that it does prohibit.

Now, there is another question I marked down, about absorbency. At first the plaintiff in its brief possibly got out on a limb when the contention was made
2169 that there was no absorbency. The City in its answering brief pointed to some evidence which showed there was absorbency, and then, as I understand it, the reply brief conceded that there might be some slight absorbency, but so slight that it could not be considered as material.

Therefore, is it necessary that there should be inspection so as to insure that there will not be more absorbency than the amount that is present now, even though it may be immaterial at the present time? For instance, one batch of containers would not necessarily be the measure for the next batch. There might be a change in the method of manufacturing. As I have said, there might be a change in the method of cleaning glass bottles. That is why they have a system of inspection that periodically requires an examination of the method of cleaning.

Should the court grant relief, which would practically be a mandamus to enact a system of regulation? You see, the first question in that connection is: Should the court first say that the ordinance is invalid, and then throw the whole thing open for the use of paper containers,
2170 if the court realizes that even if paper containers are permitted there should be some system of regulation or check to see to it that even if such containers are all right under the evidence now, they will be in the future?

That raises the other question. If there has to be some system of regulation, should the court, if it says that these containers are all right, be required to enact a code for the regulation of the use of these containers as incident to its decision that these containers are proper? In other words, is the court going to assume legislative power? Should the court go ahead and say to the community that these paper containers are all right, and while the court knows that they may be all wrong in six months, if the same safeguards are not followed and observed, yet the court simply will not do anything more? Or would the court in a case such as this say that while these things may be permitted that the court might, as an incident to granting relief, require certain safeguards? And if it should do that, would not the court really be passing an ordinance by itself, a regular system of regulation, in order to make its relief effective and yet safe?

2171 If the court should say that the plaintiff's containers in evidence are all right, I suppose that that would not necessarily include other paper containers; each paper container would have to stand on its own evidence. The effect would be, as I noticed in the contentions of the City here, that the plaintiff would have a monopoly of paper containers, because other companies would either have to bring a suit or wait until an appropriate ordinance

is passed permitting paper containers, and they would all have to qualify.

The other question I have is: What kind of an order would you want the court to make? That is all suggested in what I have said.

Mr. Schaefer: I think each of us can answer that, but the answers will not be the same.

The Master: Well, that in general is what occurred to me. The principal thing I talked about was this question of the court's waiting until the City Council should be given an opportunity to act upon it or whether the court should go ahead and let the City Council say that it will wait for the court to decide what is essentially a
legislative matter. The practical effect of all this
2172 would be that if the City Council would pass on it,
the City Council would do it within the reasonably near future, and the City Council might pass an ordinance permitting the use of paper containers. On the other hand, if the matter is allowed to remain in court, there is no telling when the litigation might be ended. It might take you several years before the whole thing is finished, and then you might have to go to the City Council after all.

Now, it is just as important from the standpoint of the plaintiff as of the defendants to decide just what the correct procedure here is. If this thing remain in the courts and the City Council stands on the sidelines, it will just remain in the court for a while, and then after you get through you may not be further along than you were in the beginning.

As I worded this question originally, the court has to look at the jurisdictional question itself, whether either side raises it. While this may not be strictly a jurisdictional question, it is a question which is in the nature of a jurisdictional one: the propriety of the court doing anything in a matter that is essentially legislative, and
2173 even if I go ahead and decide every single issue that
you have presented or even if the District Court does it, some upper court may, on its own initiative, say that this is a legislative matter, and throw the whole thing out and put you right back to where you were in the beginning.

I thought I would put that question up to you, because it seems to me to be important to both sides. If there is a short way open and it may decide this one way or an-

other and present this very narrow question, maybe that is the way to go. I know at a previous stage of these proceedings there was a time when it seems to me that both sides had decided to pass up the Master's hearings, and we did not have any hearings here for a month or two, when it seemed that the Council was going to pass upon this matter immediately. It seemed to me that both sides then thought that—

Mr. Schaefer: Both sides did not. We never did.

The Master: I mean the Board of Health, when it passed this resolution; then it seemed to me, at least, for a time, that there was some prospect that the City Council might act upon the matter. Proceedings were suspended, I know, at that time.

Mr. Schaefer: No proceedings were possible at
2174 that time. The question there was, when the plaintiff filed its brief, the plaintiff delayed in filing its brief.

The Master: We will put it that way then.

Mr. Schaefer: But the hearings were continued.

The Master: Then we will say the plaintiff thought that possibly the City Council might do something.

Mr. Gariepy: No, the plaintiff did not have any thoughts at all, because the plaintiff had waited three years for the Board of Health to take this matter in its teeth, and when on October 26th it took this action the plaintiff had the right to assume that the Board of Health was going to make some suggestion to the City Council to do something, since it was the guardian of the public health. Apparently the plaintiff or the public or the Master or counsel for the defendants were all mistaken, because the Committee said, "We will wait until the court passes upon it; we will not do anything until the court passes upon the legality of this subject." And there is our status.

The Master: Now, the question is whether the Council's Committee should decide this legislative question itself at the present time or whether even if the court
2175 should go ahead and decide, the Council Committee would have to decide it at some future time. In other words, the court might say that so far as the evidence here is concerned the plaintiff is entitled to something, but it is all the legislative question, and it depends upon the City Council after all to pass the regulations which might be necessary, even if it should be proved that this particular batch of containers would pass muster. I

have suggested the question, the mere fact that you have some proper containers here now does not necessarily mean that future containers, even manufactured by you, would be the same, so that there might be some justification for an inspection measure to be passed which would be operative in the future, so as to see that what you started out with would remain about the same.

Mr. Gariepy: We can all agree, Master, that the court and the Master will not tell the City what regulations to establish, but the court can pass upon the legal questions presented here without prejudice to the right of the City to set up such suitable regulations as will protect health.

That is the burden of the City, to go ahead and es-
2176 tablish those regulations to protect public health, the same as they did with the glass bottles. They got regulations to take care of that, and they ought to have regulations to take care of this. But standing by and waiting for something to be done and saying wait until the court does something I don't think is doing us any good. The court stands by and the Committee adjourns sine die and so on, and we just wait.

The Master: Have you any thoughts on this general subject that are more concrete than that? You said you had some memorandum that you might present on it.

Mr. Gariepy: The contention of the plaintiff is that the Court should pass upon the question with regard to the validity of the ordinance concerning the containers coming within the ordinance or whether the ordinance kicks the containers out or prohibits the containers from being used. That question can be decided without prejudice on the part of the City, the defendant, to establish or set up reasonable rules and regulations, such as the United States Public Health Service has already suggested and set up in their model ordinance. The City can set them up or adopt those concerning the matter of control of containers,
2177 paper containers, in the same way as they have regulations now concerning the use of the glass bottle. If they have one, they ought to have the other. There isn't any reason why the regulation should not be established. That is the beacon light the United States Public Health Service has shown them, and it has taken some action to give them the road to follow. I don't think the Master or the court should tell them just what the regulations should be, but they should be those reasonably to protect and conserve public health.

The Council started a hearing over there, and then stopped. There were several months of talk and argument. The question was raised as to who the Public Health Service was. Some of the members of the Committee didn't even know who they were. They asked Dr. Bundesen, I think it was, who they were, and what functions they had. The Doctor explained that they had always followed their lead and their action in October was to continue to follow their lead. He has always been of the opinion that the Chicago Board of Health had safe guidance in following their lead, and a witness for the City here said they got considerable force and backing and prestige in
2178 following their regulations in adopting regulations and ordinances from time to time.

Now, if they did that in the past and got their help in the glass bottle matter, there is no reason why they should not get that same help in the paper matter and why the suggestions they set up in Section 10 should not be considered in this same matter.

I think the Court's province is not in the field of legislation. That would be prejudicial to the right of the City to establish and set up such regulations as the City sees fit and necessary to protect health. That is as far as the court can go. I think counsel will agree that it has no right, nor has the Circuit Court, nor has the Superior Court, to say that this regulation shall be adopted or that regulation shall be adopted.

The Master: We have discussed, I think, in this case, at one stage or another, whether the City might object to paper containers on the ground that it could not effectively regulate them. Namely, they contend that the paper mill is frequently in a distant state, that there might be some things getting into the paper container or the
2179 paper or in the process of manufacture over which the City should have some regulatory power. There has not been anything said in the brief about that subject.

Mr. Schaefer: On the contrary, Master.

The Master: What is that?

Mr. Schaefer: On the contrary, there has.

The Master: About regulating at a distance?

Mr. Schaefer: Yes.

The Master: Of course, there is evidence to the effect that it is not necessary to regulate the first process of manufacture, because all bacteria are dead by the time that

you get to the paraffining process, which is always a local matter.

Mr. Schaefer: Yes, and there is testimony to the contrary.

The Master: The testimony, or one bit of testimony, is that there may be in the wall of the container dead bacteria, and if there is any substantial amount of absorbency the dead bacteria might get into the milk and set up a serum. That is Dr. Arnold's testimony.

Mr. Schaefer: No, I do not agree with you, Master. I don't know whether you noticed it or not, but no-
2180 where in the brief do I refer to Dr. Arnold's testimony. I refer to the testimony of Dr. Sanborn.

The Master: What does he say?

Mr. Schaefer: I don't have it spelled out here, but I refer to the page.

The Master: What, generally, is your proposition?

Mr. Schaefer: Generally, Sanborn says the sanitary condition of the paper mill is of the most important factor in the manufacture of paper containers, and so do the others say that.

The Master: On what page of your brief is that?

Mr. Schaefer: From pages 45 to 47. Dr. Sanborn testified to this, as I recall; that in his opinion, in the interest of public health, standards governing the production of paper board for use in paper milk containers and governing the subsequent processing and handling of that paper board until the container is filled with milk should be formulated, adopted and enforced by public health authorities.

The Master: Would your position be that in no circumstance, no matter how perfect a paper container might be made to appear, would it be proper to market such paper container, because of the fact that the City does not have any jurisdiction in, say, the State of Massachusetts?

2181 Mr. Schaefer: No, that would not be our point. Our point would be this: whether an ordinance is valid or invalid, on the grounds that are involved in this case, depends upon whether or not there are differences between the permitted product and the prohibited product, which are reasonably related to the public health. Here is the difference. The sanitary condition of one container can be ascertained—and this we set forth in our brief—can be ascertained by control at the spot where the con-

tainer is filled with milk, and the testimony of plaintiff's witnesses is that you can produce a sterile container by control there.

Now, we cannot—of this I am convinced—we cannot be forced to permit a container which has a different characteristic, that is, there is a difference which is reasonably related to the public health. The one you can control at the time it is filled with milk; the other you cannot. From the testimony of plaintiff's witnesses there is a difference which squarely relates to the public health.

Here in our brief we have quoted Dr. Prucha on the inspection of mills:

2182 "Milk sanitarians should inspect paper mills and check on the pulp."

The Master: What page is that on?

Mr. Schaefer: Forty-six.

The Master: Yes.

Mr. Schaefer: And we refer to Dr. Sanborn all the way here. And here is a long quote from Prucha. It is all there. The argument is not that we have not any police power in Massachusetts at all. We will worry about that if, as and when the legislative body wants that. I would not take the position that we did not have. There are decisions that say we do not. I would not concede that those decisions are sound law and I do not concede it. I those decisions are sound law, then we have no right to inspect the plant of the plaintiff here at all. If *Rockford* v. *Hay* is the law of Illinois, and I don't think it is, and all of us agree on it—but I am not talking about that. I am talking about the differences in these products that are related to the public health. Now, one is absorbent, one is not absorbent. You don't need to go beyond that difference, it seems to me. There is a difference there. And when a difference exists, the legislative body makes

2183 the choice. The same thing applies to transparency.

The Master: Your position is that the City Council could enact an ordinance providing for inspection and hire the inspectors to go out to Massachusetts to inspect and that if a container is to be permitted to be used in Chicago the container people would have to grant access to its plant in a distant state, if the paper container company wanted to have its container used in this city, is that correct?

Mr. Schaefer: Well, I do not have to take a position on that now. That might be my position if that time came.

My point is that we cannot be compelled to permit the use of an article that requires, on the testimony of plaintiff's witnesses, a different type of inspection.

Now, on these other things—while I am talking I might as well go through these things that have been running through my mind—there is, I think, a pretty profound misconception of the United States Public Health Service and its relation to the Chicago ordinance, and that exists pretty generally. Everyone says we have the United States Public Health ordinance. Actually, the out-
2184 standing characteristic of the United States Public Health Service ordinance is one that we do not have. That is that the United States Public Health Service has two grades of milk, Grade A and Grade B, and their system of enforcement is by degrading milk.

The Master: By degrading?

Mr. Schaefer: That is right. If a Grade A man fails to comply or if a Grade A farmer fails to comply, he is made a Grade B farmer and his milk is sold as Grade B, where, while it is not spelled out in the ordinance, there is a price differential. So if a dairy fails to comply, they simply refuse to let them sell Grade A milk and they sell Grade B milk. So you can see what happens to their customers.

That is the outstanding feature of that ordinance. That was the novel thing in the United States Public Health Service ordinance. The City of Chicago did not follow that. And there is a number of other places where we departed substantially from the United States Public Health Service ordinance.

You said the usual course was to follow the United States Public Health Service ordinance. That is not so. We follow that or not as the City Council and the
2185 Board of Health see fit. The United States Public Health Service is simply and solely an advisory body. We follow that no more than we will follow the recommendations of the University of Chicago or the University of Iowa or any other body.

The Master: Let us put it this way. When I say follow, I mean in point of time usually the lead is taken by the United States Public Health Service, is it not?

Mr. Schaefer: No, I don't think so.

The Master: What is that?

Mr. Schaefer: I would not go that far. For illustration, we have been requiring the use of Grade A cream for

the manufacture of ice cream in the City of Chicago for years. Now in the future the United States Public Health Service is going to require the use of Grade A cream in ice cream, but they do not require it now.

The Master: Let us put it this way. In some matters the lead is taken by the United States Public Health Service, and that is a very persuasive influence on the municipalities as to whether they should or should not adopt a particular measure, that sometimes particular measures may not be adopted by the municipalities until the
2186 United States Public Health Service recommends them. I say particular measures. Some measures. In others the City may not wait upon the United States Public Health Service, but in some cases, if there is some doubt about them or if the municipality for any reason does not feel like adopting those measures, then the United States Public Health Service takes the initiative and says they are all right; whereupon, on those particular instances, the City may follow their lead.

So without making a general statement as to all matters, that the Public Health Service takes the lead and the municipalities wait upon them, I say as to some matters that is the case. I think you will agree to that.

Mr. Schaefer: Oh, yes, I agree with that, because that does not—

The Master: I say, it is part of the practice in this health legislation.

Mr. Schaefer: There are about four hundred cities that make any effort at all to follow the United States Public Health Service. The vast majority of eight hundred thousand or I don't know how many hundred thousand cities make no pretense of following the United States
2187 Public Health Service. Now, actually—well, this is way off the record, so I won't go into it.

The Master: Well, isn't there some evidence here by Dr. Bundesen that that is the practice?

Mr. Schaefer: It does not make any difference, anyway. Dr. Bundesen's evidence is there for what it is worth. Whatever I say is not evidence, any more than what Fred said a few minutes ago.

The Master: Dr. Bundesen said that has been the practice here, and now that the Public Health Service has said it, he says it.

Mr. Schaefer: But you know, as a matter of law, what effect the United States Public Health Service has.

The Master: It has no effect.

Mr. Schaefer: Of course.

The Master: But I am talking about practice now. The only evidence in the record now, as far as I know, is Dr. Bundesen's statement.

Mr. Schaefer: I don't want to quarrel with what is in the record. If that is in the record, all right.

The Master: Am I right on that, Mr. Gariepy?

Mr. Gariepy: That is right, Master. He said he objected to the use of the paper container in the city
2188 until the United States Public Health Service had recognized it, and as soon as he found out that they had recognized it he brought the matter before the Board for attention.

The Master: And didn't he also say that that was the usual practice in this city?

Mr. Gariepy: That is right, he did say that. He also said before the Special Council Committee that they followed them in the past.

Mr. Schaefer: That is not in the record in this case.

Mr. Gariepy: He said in the other room, on cross examination, that as soon as the Public Health Service had seen fit to recognize this, he recommended that the City of Chicago follow that practice, that he did that in the past and has continued to do so.

Mr. Schaefer: Whatever is in the record, is in the record.

The Master: Have you prepared anything on this question?

Mr. Schaefer: Yes. On this question of a new device, it occurred to me now, while you were talking this morning —it had not heretofore—that you must consider legislative non-action as the equivalent of legislative action. I
2189 think the two are almost precise equivalents. I had not thought about this before and I have not thought it through, but it seems to me there is the answer to the particular problem that is bothering you. I think legislative action and non-action are synonymous. That is, non-action is the same as affirmative action the other way.

And I think there is no doubt of this: A police regulation which is valid today may, because of changed conditions, economic or otherwise, become invalid tomorrow, and there are cases so holding, the leading one being Chief Justice Hughes' opinion in that *Abie* v. *Weaver*, which in-

volved a Nebraska statute requiring banks to contribute to a state fund to insure their deposits. That went to the Supreme Court and its constitutionality was sustained. When the depression came along, it was found that the fund was not actuarily sound, that is, it was not adequate to insure deposits. This case that I just referred to went to the Supreme Court, and while the statute escaped invalidity, because the state had provided another method of liquidating, still the inference is unmistakable that the court would have held it bad even though it had theretofore held it good, and the Chief Justice said so.

2190 The Master: What is the citation on that case?

Mr. Schaefer: 75 Lawyers' Edition, 691.

There was a rent case that came up after that first group of emergency rent cases in Washington in the District of Columbia during the War. The first group of cases sustained the rather drastic regulations. Another case came along involving the Chaselton Apartments, or some such building, and the regulation was held invalid, the conditions having changed.

Mr. Rall: And another case is that of the Louisville & Nashville Railroad, a grade separation case.

Mr. Schaefer: That is right.

Mr. Rall: Where the Tennessee statute requiring an equal division, the railroad was sustained, and about ten or fifteen years later the same statute, applied to changed conditions, was held, in the opinion of Justice Brandeis, because of the changed conditions, to be unconstitutional in its application. I can send over the citation. But we agree, I think, as to the general rule, that the court will consider that this ordinance is reenacted every day that the City fails to make a change in it.

Mr. Schaefer: I think so. It is a continuing piece of legislation. I am going to think about that a little

2191 bit. It is an epigrammatic statement.

The Master: You may go ahead.

Mr. Schaefer: One thing that may be significant as to the City's position is that a question rather like this one came up before Judge Sullivan in the two cases that were before him, and he asked for briefs on this question, whether since the thing involved was an ordinance of the City of Chicago the demands alleged by the two complainants to be made upon the president and members of the Board of Health were of any significance or whether a

demand should have been made upon the City Council to change the ordinance.

In our brief there we took the position that the allegations as to any demands were superfluous, that they could be disregarded, that the validity of the legislation could be questioned without any precedent demand at all. That has been our attitude. Certainly I agree with Fred that neither you nor the court can prescribe regulations.

The Master: Neither can?

Mr. Schaefer: That is right.

The Master: But should the court do something that is not effective for the purpose?

2192 Mr. Schaefer: That goes to the way you decide the case, it seems to me, and not to whether or not you have the power to prescribe any regulations.

The Master: I am asking that now. I have to assume that the court's order can be effective. If the court should say that the plaintiff is right, what effect would it have?

Mr. Schaefer: Well, take this case. A statute in Illinois prohibits crimes against children, sex crimes against children. It was held invalid. A man who had been indicted under that statute and found guilty escaped punishment. The policy of the court and the common sense of the court would tell them that some punishment was necessary for that offense, and yet the court, the legislation being invalid, did not hesitate to hold it invalid on the ground that with that statute invalid there was no punishment for that particular crime.

That is just an example that leaps into my mind, and that happens often. Suppose the workmen's compensation legislation is held invalid. The mere fact that the court may think legislation on that subject was highly desirable does not influence the court one way or the other in

2193 deciding the question of validity. I think that what the court has to consider is simply that bare question of validity and invalidity.

The Master: Let me put it this way. You said in your brief that this whole matter is a legislative question, that this is all a question of legislative discretion.

Mr. Schaefer: That is right. If there are differences, it is a question of legislative discretion. If there are no differences—

The Master: All right. You say it is a question of legislative discretion. Now you say this whole subject of

regulation of milk containers, glass or otherwise, is a matter of legislative discretion. If that is the case, how do you reconcile that with your statement that the Court should decide it

Mr. Schaefer: The validity of the legislation is now being attacked upon the ground, in substance, that the legislation discriminates against the paper container. My point is this; that so long as there are differences that are related to the public health, that is a legislative question. If there are no differences relating to the public health, then the ordinance is discriminatory and invalid.

2194 Here is a case a good deal like it. Take that Marysville Oil Tank case that was cited, the Gasoline Tank case, where the ordinance of the city required gasoline tanks to be below ground. The oil company, whichever one it was, brought in evidence to the effect that they have stored oil above ground in this municipality and others, and there has been no harmful effect, and so on. But the court found there were differences in sustaining the requirement that gasoline be stored below ground. They would not have had to worry, it seems to me, in deciding that case, about whether regulations for the storage of gasoline above ground were necessary or not.

The Master: Have you prepared any memoranda on this thing that you want to leave with me?

Mr. Schaefer: I have not, no, sir.

The Master: You just looked up those cases to which you referred?

Mr. Schaefer: Yes, I will give you those. There are one or two others.

The Master: Is there anything more you want to say?

Mr. Schaefer: There is this that I want to say. I want to urge you to read the testimony referred to here. I did not set it out, because I did not feel it was right

2195 to set it out, but it is there and it is in the plaintiff's testimony.

Mr. Rall: The plaintiff's answer is probably so conclusive to that point that your Honor has not looked at the other.

The Master: As I say, I read the briefs. I have not studied the record.

Mr. Rall: If it is true the City contends that in order to have adequate inspection and adequate control they must go to the paper mill, our contention in that regard is that

the very witnesses who talked about inspection of paper mills testified that the City had just as much control by means of inspecting the product after it got here in the case of paper as in the case of glass.

It is true that if you find contaminated paper, in order to trace it to its source you might have to go to the paper mill, but the City is not interested in tracing the source of it. The City is interested in the negative thing of stopping it. If it has got the power and the means at hand for stopping it, it will be up to the people to see that their containers are kept uncontaminated.

The Master: Of course, I might say one thing.
2196 You gentlemen seem to try to draw a parallel between paper containers and glass containers which does not exist. There has been frequent argument on the point of, "Well, why can't you go ahead and examine the manufacturing plant of the glass bottle?" I would say that it is not necessary to do that, because we all know that glass is made under such extreme heat that no bacteria could be there. So that the only form of regulation which suggests itself is to see that the bottle, after it gets here, is clean and kept clean. So that that is a form of regulation that they have there, that of bottle cleaning.

Now, then, in the case of the paper containers, which are used only once, you do not have to have any cleaning, after they are here, but there the regulation which suggests itself is to see that it is clean when it gets here.

Mr. Rall: That is right.

The Master: Now, that is the difference between the two. You argue in your brief that the amount of bacteria which may be in a paper container at the time that it gets here is no greater than that which may be found in a glass container after it has gone through the cleaning proc-
2197 ess. You say there is just as much bacteria or less in your container when it gets here and is used once as there is in the glass bottle while it is in the course of being used. That is the parallel you draw. I think that there is a comparison that may be the subject of some consideration.

Mr. Rall: On the point that is raised about the necessity of going to the mill, it seems to me that that is to be answered by determining whether or not there are tests after the paper containers reach the jurisdiction, so to speak, which will indicate whether or not they are contaminated.

It is our position that while the tests are different than they are for glass bottles after the glass bottles are cleaned, they are just as effective.

The Master: Anything else?

Mr. Gariepy: Adding to where your Honor left off, you spoke about just as effective. According to the evidence it is more effective and they are more severe tests. In other words, the mere fact that the paper container lends itself to a more severe test is not any reason why the paper container should be prejudiced or discriminated against, when the glass bottle in its rounds of use lends itself to exposure. As the City's own witness testi-
2198 fied, if they found anything wrong with the paper they could stop it, and all of the witnesses said they could stop it. In the same way they could stop the use of glass bottle or the rinsing or the washing process of the glass bottle at the dairy.

As far as control is concerned, there is no evidence in the record whatever that the City won't have adequate control, if they follow out the suggestions that have been followed by other cities. Witnesses here have told us that they have tried out those things for months and years. There is no evidence in the world that the City is going to be prejudiced or the public health in any way imperiled if they restort to these methods. The City has not shown that these methods are not sound and the tests are inaccurate. In fact, Dr. Arnold says these tests were true, but they were misrepresented.

Mr. Schaefer: No, he didn't say that.

Mr. Gariepy: He said he didn't agree with their reading of them.

Mr. Schaefer: Not about these tests. The tests you are talking about are the disintegration tests and the rinse tests.

Mr. Gariepy: Yes. But those are the only two
2199 tests on the containers. What other tests are there?

Mr. Schaefer: You misunderstand what Arnold was talking about. You were asking him about Prucha's experiments.

Mr. Gariepy: I asked him about both, the disintegration tests and the rinse tests.

Mr. Schaefer: The only way to get straight on that is to read the record.

The Master: What is the point you have on that?

Mr. Schaefer: The point I have on that is this. These

witnesses jumped all around on whether or not inspection was necessary. Sanborn was, I think, the only leading witness for the plaintiff. The plaintiff may disagree with me. They tried to get Sanborn to run away from his original testimony, that inspection at the mills was necessary. I have set out where he said that here in the transcript by reference. I have not repeated all of the testimony. He testified it was more expensive to produce sanitary paper than paper of a lower sanitary quality. Here is what he said about the disintegration tests and about the necessity of mill inspection. He said that while disintegration tests could be an index to the sanitary
2200 condition of manufacture in the paper mill he did not think it advisable, from a sanitary or public health point of view, to rely alone upon disintegration tests to determine the sanitary quality of the paper board.

Sanborn testified flatly to the necessity of mill inspection. Prucha wrote flatly that mill inspection was necessary for the purpose of determining—

The Master; Prucha said that?

Mr. Schaefer: I read it just a minute ago. Prucha in October, 1937, said this:—

The Master: In 1937?

Mr. Schaefer: (Continuing.) —"Milk sanitarians should inspect paper mills and check on the pulp."

The Master: They should.

Mr. Schaefer: All right, they should.

The Master: As I remember his testimony here, it was not to that effect.

Mr. Schaefer: Sure, he was running away from it. They were all running away from it, because they saw where it would lead to.

The Master: His testimony was that it would be immaterial.

Mr. Schaefer: To inspect that one mill.

The Master: Any mill.

2201 Mr. Schaefer: No, not any mill.

The Master: I remember asking him the question, whether it would be all right to manufacture this paper out of water from the Sanitary District channel. Sure, he said, it would be immaterial.

Mr. Schaefer: If you are going to consider that, read everything he has said.

The Master: That goes to his credibility.

Mr. Schaefer: Yes.

The Master: Your point is that Mr. Gariepy is mistaken in his statement that there is no evidence whatever in the record to the effect that inspection at the mill is desirable or necessary. You say there is such evidence in the record and it is supplied by the direct oral testimony of Dr. Sanborn and those writings of Dr. Prucha.

Mr. Schaefer: That is right.

The Master: Both plaintiff's witnesses.

Mr. Schaefer: That is right. Now, in addition, you seem to be under the impression that the record shows that these containers are more sanitary than the glass bottle.

The Master: I didn't say anything to that effect.

Mr. Schaefer: Then let me say that plaintiff's
2202 attorneys seem to be under that impression. Actually the record shows just the opposite. The only testimony here as to the condition of paper containers in actual use is of this fellow Woodman from the City of Evanston, who came down here and testified as to the rinse tests that he made on the containers right at the plaintiff's plant. There were about 101 of those, and there were about the same number on the American Can containers from the River Forest Dairy. Now, he testified specifically with reference to plaintiffs containers that 93 of the 101 examined had a bacterial count above the permissible maximum of 1,000. That is, seven per cent running above—

Mr. Gariepy: Who said that?

Mr. Schaefer: Woodman said that.

Mr. Gariepy: You are wrong.

Mr. Schaefer: I am not wrong.

Mr. Gariepy: Look at our reply. I quoted it in our reply brief.

Mr. Schaefer: I will ask Owen, did he say that or didn't he?

Mr. Rall: You said that he said that 93—

Mr. Schaefer: No, he said seven per cent.

Mr. Rall: You misspoke yourself.

2203 Mr. Schaefer: Oh, I am sorry. He stated that seven per cent were above the permissible maximum.

The Master: All right. I though you said 93.

Mr. Schaefer: That was my error. The actual count on the glass bottles does not show anywhere near that high. Those were actual counts in the City of Chicago. That is all the evidence there is on actual conditions. While he did not give us the specific information on the

other type of paper container, the American Can container, he did say they ran the same, and on that statement I did not ask him for the file he said he had with him. You asked if I was satisfied with that and I said yes, they ran the same. That is the evidence as to the actual conditions. That is not taking samples from somebody, going to the paper mill and disintegrating them. Those are things as they come from the dairy.

The Master: I will have too look at the briefs. Both of you have covered your positions. Now, if you will leave with me, Mr. Gariepy, that memorandum you have with you today, and if you want to submit your little memorandum as to those cases I will be glad to consider them.

I thank you very much for coming in this morning.

I just thought I would ask you these questions which
2204 were running through my mind. I think it has been helpful. You have brought some things to light.

Mr. Schaefer: Would you like oral argument on the whole thing?

The Master: I will read the briefs again and then if I think oral argument will be helpful I will let you know.

Mr. Schaefer: All right.

The Master: Now, off the record.

(Discussion had off the record.)

The Master: That will be all, gentlemen. Thank you for coming in.

(Whereupon, the conference was adjourned.)

2205 • • (Caption) • •

Stenographic report of discussion had at the office of United States Master in Chancery Jacob I. Grossman, Suite 753, United States Court House, Chicago, Illinois, at 2:30 p. m., Friday, April 26, 1940.

Present:

Mr. Fred A. Gariepy and Mr. Owen Rall, representing the plaintiff.

Mr. Walter V. Schaefer, representing the defendants.

The Master: I noticed in the objections of Mr. Schaefer that he raised some question concerning the record

in this case. In order to get that straightened out, I thought it would be best if we could sit down here and get a statement of record.

Now, I have made part of the record—or I am making a part of the record—the conference that we had here on March 9, 1940, comprising pages 2161 to 2204.

Mr. Schaefer: Well, if the Master please, I don't
2206 believe that the report of that conference should be a part of the record. It was denominated an informal conference.

The Master: By the reporter.

Mr. Schaefer: By the reporter, yes, sir, and by the parties, because, after that hearing was had, we discussed whether or not it should even be written up, and it was written up only for convenience of the parties. Such was my understanding.

There are statements there—when I got the transcript of that conference, I ran through it. I noted the remarks —my observations concerning statements made by you, Mr. Gariepy and Mr. Rall. There were a number of things —a number of statements made—which I did not challenge, because I didn't consider that the hearing was a formal hearing and to be a part of the record. And, also, there were statements made which were not evidence, made by the attorneys for the parties. Now, I made some; Fred made some, and Owen made some.

The Master: Just let me complete this: The point I am getting at is, that whatever has occurred in Court, is something of which the Court can take notice, and
2207 if that is so, a transcript of what occurred can properly be made a part of the record.

Now, if some lawyer made a statement which is not evidence, of course it has no greater effect that a statement made by him during the taking of evidence—the mere fact that the lawyer made the statement.

Now, I think, however, we can clear all that up today by an agreement as to the facts that you have in mind, namely, the things I am talking about are the facts with reference to the pendency of the ordinance before the city council, and the chronology that you referred to in this memorandum that you handed me yesterday, or the day before yesterday.

Now, I—

Mr. Schaefer: (Interrupting.) Could we take that up

first and see if we can obviate that report being part of the record?

The Master: Well, I don't think the report being a part of the record hurts anybody. I think it is rather clarifying on the position of the parties on this thing. It is the same as the briefs in some respects, and the only thing that
2208 you have in mind here is the dates when certain things occurred, and also whether certain things did occur.

Now, you have set that up—

Mr. Schaefer: (Interrupting.) And also the materiality or immateriality of those occurrences, and it seems to me it is quite one thing, when we are discussing a matter informally between us, as a matter of mutual discussion, and another thing to have that as a part of the record.

The Master: You are referring now to those occurrences before the city council committee?

Mr. Schaefer: Yes, sir.

The Master: Well, if they are agreed that the chronology that you have presented here is correct, you don't object to that going into the record, do you?

Mr. Schaefer: Only on the ground of immateriality as to the fact that they are the facts—I have no objection to that—but I cannot see, for the life of me, how it makes any difference.

The Master: Well, I think it does. I think, as I have stated in my report, the fact that the matter is pending before the city council, is something of which the Court may take notice, and may consider in disposing of
2209 this case. That is why I am trying to get the record straight on it. I have referred to that, and I think there should be some factual basis in the record, and that is what I am trying to clear up.

Now, off the record here a minute.

(Discussion outside the record.)

The Master: Let this be agreed, then, as to the chronological statement. I am putting it into my report, and it is going into the record by agreement:

In October of 1939, the United States Public Health Service amended its model ordinance to add paper containers (Plt's Ex. 92, Defts' Ex. 29, Rec. 1567). Thereafter, on October 16, 1939, the Chicago Board of Health recommended to the city council similar action. In the meantime, hearings in this suit had begun, and were being held at such times as expert witnesses from other states

could appear. The defendants' case was closed on October 13, 1939. On October 16, 1939, the Board of Health made its recommendations to the city council. On October 19, 1939, the defendants requested and were granted leave to reopen proofs and submit further testimony. Ac-
2210 cordingly, on October 23, 1939, the defendants offered further evidence, and again closed their case. The plaintiff completed its proof on October 26, 1939. The recommendation of the Board of Health was referred by the council to its committee on health. While the matter was under consideration by the committee, plaintiff's brief was not filed before me. On November 22, 1939, the committee on health voted to defer action upon an amendment to the ordinance pending the outcome of this case. Thereafter, briefs were filed in the case at bar, the plaintiff's brief on December 19, 1939, the defendants' brief on January 27, 1940, and the plaintiff's reply brief on February 15, 1940. Further proceedings were had in the case on March 9, 1940, the transcript of which is made a part of the record. Additional memoranda based upon those further proceedings were filed on March 15, 1940, and on April 13, 1940. On April 26, 1940, which is today, the record was reopened for the purpose of formally incorporating the above facts in this record.

Now, is there anything further that ought to go into this record? Is there anything that either side here
2211 has raised in the objections which go merely to the question of the record?

Mr. Gariepy: I have got one suggestion I would like to put into the record at this time, before we take up these suggestions that are filed by counsel and by plaintiff.

Within the last two weeks, it is a matter of common knowledge that homogenized milk is being sold in the City of Chicago, and being sold by and with the permission of the defendants. The Master, in his report filed here some 11 or 12 days ago, made reference to the matter of the cream line, and he made reference to the matter of the fact that the cream in the paper bottle became diffused, and did not concentrate or localize itself. The homogenized milk, by its very definition, is milk where the cream line is not observable, and where the milk is of the same quality throughout, or the cream is diffused throughout, so that it is one, continuous quality of milk from the bottom to the top.

If the city of Chicago and the Board of Health, the defendants, permit the sale of homogenized milk at this time—and homogenized milk is, as the name suggests, milk where the cream line is not observable, even in glass
2212 containers, and the cream is diffused equally and evenly throughout the milk—then the comment in the Master's report in his findings, and reasons therefor given, are of sufficient importance to the plaintiff for the plaintiff to ask leave at this time to offer proof that homogenized milk is now being sold, and has been sold, during the past 15 days, and was not at any time being sold during the pendency of this law suit before the Master, so we were not negligent or derelict in our duty in not presenting the point, and could not have presented it, since it was not a fact in being at the time. The Master has given those factors significance in his report, and I think we ought to be given an opportunity to meet them.

The Master: Do you agree that that kind of milk is being sold, or do you agree in the statement, Mr. Schaefer?

Mr. Schaefer: Well, I agree that homogenized milk is being sold in the City of Chicago without interference by any of the defendants. Homogenized milk, however, is being sold as such—labeled as such—and the homogenized milk which is being sold is required by the State Department of Public Health to be of such a quality, that
2213 samples taken from the top of the bottle, and from the bottom of the bottle 48 hours after the milk has been bottled, do not show a variation in the butter fat content greater than a small percentage of one per cent.

Mr. Gariepy: With regard to the State Board of Health, there is nothing in the ordinance on homogenized milk. Perhaps there would be something in the regulations of the Board of Health recently passed in the last 30 days to legitimatize the sale of this milk, so to speak.

The Master: At any rate, this homogenized milk is being sold, as Mr. Gariepy states, with the exception, as you state, Mr. Schaefer, that it is labeled and sold as such, isn't that right?

Mr. Schaefer: That is right, and that it meets certain requirements.

The Master: Yes. Is that agreeable with you?

Mr Gariepy: Yes.

The Master: So that the record now shows the fact with reference to homogenized milk.

Mr. Gariepy: There is nothing in the ordinance, you agree with me on that—

Mr. Schaefer: (Interrupting.) That is right, and there has been no regulation of the Board of Health.

2214 Mr. Gariepy: (Continuing.) —passed to permit its sale. It is just being done.

Mr. Schaefer: No, by virtue of state regulations.

The Master: At any rate, it is being sold; that is all we are interested in. We don't care how it is being sold, but it is being sold.

Mr. Schaefer: Yes.

Mr. Gariepy: In glass bottles—let's put that in, too.

Mr. Schaefer: Put that in my statement.

Mr. Gariepy: In glass bottles.

The Master: Yes. Now, is there anything further that is to go in the record?

Mr. Gariepy: You agree with my statement, also, Mr. Schaefer, that at the time of the trial that was not permitted, so we had no opportunity to go into that matter?

Mr. Schaefer: Yes, I agree to that.

The Master: Anything further?

Mr. Schaefer: To be added?

The Master: Anything further to go into the record?

Mr. Schaefer: No, sir.

The Master: Let the record show proofs closed.

Proofs closed.

2308 And on, to wit, the 24th day of May, A. D. 1939, there was filed in the Clerk's office of said Court certain Depositions, originals of which are in words and figures following, to wit:

2310 In the District Court of the United States.

* * (Caption—316) * *

(Filed May 24, 1939, Hoyt King, Clerk.)

Deposition of Paul V. Keyser, Jr., a witness in behalf of plaintiff, taken, pursuant to notice to take depositions served on the defendants April 15, 1939, at the office of Mudge, Stern, Williams & Tucker, 20 Pine Street, New York, N. Y., on Tuesday, April 25, 1939, commencing at

2:00 o'clock, p. m., before Irvin Taber, a Notary Public in and for the County of New York, State of New York.

Appearances:

Gariepy & Gariepy, Esqs., Attorneys for Plaintiff, by Owen Rall, Esq., of counsel.

2311 Barnet Hodes, Esq., Corporation Counsel of the City of Chicago, by Walter V. Schaefer, Esq., and Charles P. Horan, Esq., Assistants Corporation Counsel.

PAUL V. KEYSER, JR., a witness of lawful age, having been first duly sworn by the Notary Public, testified as follows:

Direct Examination by Mr. Rall.

Q. Will you state your name, please?
A. Paul V. Keyser, Jr.
Q. And where do you reside?
A. At 142 West 11th Street, New York City.
Q. And your business address?
A. Is 412 Greenpoint Avenue, Brooklyn, New York.
Q. And, for the purpose of the record, your age?
A. Thirty-two.
Q. And what is your occupation?
A. I am a chemical engineer.
Q. Connected with whom?
A. The Socony Vacuum Oil Company, Incorporated.
2312 Q. Is that sometimes commonly called the Socony Vacuum Corporation?
A. It is.
Q. How long have you been so engaged?
A. Nine years.
Q. And previous to that time were you engaged in any business or profession?
A. No.
Q. What briefly has been your education?
A. I graduated from M. I. T. in 1929.
Q. That is the Massachusetts Institute of Technology at Boston?
A. The Massachusetts Institute of Technology in Cambridge, Massachusetts.
Q. Yes, in Cambridge? And with what degree?

A. With the degree of Bachelor of Science in Chemical Engineering, and, in 1930, with the degree of Master of Science in Chemical Engineering.

Q. Previous to your entry into the Massachusetts Institute of Technology you had a high school course?

A. I had a high school education in Washington, D. C.

Q. And also a grade school education?

A. Yes.

2313 Q. At the same place?

A. At the same place.

Q. Now, you referred to a Master of Science degree. What additional schooling did you take which authorized the granting of that degree?

A. The course occupied one full year and followed the curriculum outlined by the Institute, which included advanced work in the general field of chemical engineering and a practice school which involved six months' training in various industrial organizations.

Q. And did that work follow without interruption your Bachelor's degree?

A. It did.

Q. And you then entered the employ of the company by whom you are now employed?

A. I did.

Q. What briefly has been your experience since entering the employ of the company?

A. I have been employed constantly in the general laboratories of the corporation.

Q. And where are those laboratories located?

A. Located at 412 Greenpoint Avenue, Brooklyn.

Q. How many men are now engaged in that laboratory?

2314 A. Approximately 160.

Q. In the laboratory?

A. In this division of the laboratories.

Q. State briefly what the business of the company is.

A. The company is in the petroleum business, and its scope includes the production, refining, and marketing of petroleum products of all types.

Q. Will you name a few of them?

A. Amongst which might be mentioned fuels, lubricants, processing materials such as waxes and so forth.

Q. Paraffin wax, I understand, is a product resulting from refining?

A. That is correct, of petroleum.

Q. Of petroleum. And where does your company manufacture—at what refineries does your company manufacture paraffin wax?

A. Paraffin wax is manufactured at our Long Island City refinery, amongst others.

Q. Do you know whether or not the paraffin wax manufactured at that plant is sold to the Dean Milk Company and shipped to Chemung, Illinois?

A. Yes, it is.

Q. Have you made an investigation to determine
2315 what the quality is of the paraffin wax so sold and shipped?

A. I have.

Q. Will you state what it is?

A. The paraffin wax manufactured at the Long Island City refinery and shipped to the Dean Milk Company is refined paraffin wax with a melting point of 125 to 127 degrees Fahrenheit, A. M. P.

Q. Is that capital A, capital M, and capital P?

A. Capital A, capital M, and capital P.

Q. What do those initials stand for?

A. American Melting Point.

Q. Are you familiar with the process of manufacturing this wax?

A. Yes.

Q. Will you describe it, particularly with respect to the sanitary conditions under which it is manufactured?

A. Yes. Paraffin wax is extracted from a distillate removed from the crude by distillation.

Q. When you refer to "crude" it is crude petroleum?

A. Crude petroleum.

Q. Crude oil?

A. Crude petroleum oil. Prior to the removal of the wax the distillate is treated with sulphuric acid to remove
2316 certain unsaturated bodies. It is then pressed, sweated, further treated with acid and washed with caustic soda, passed through a filter and finally molded into cakes.

Q. When you refer to "sweating", of what does that process consist?

A. The sweating process may be described as a fractional crystallization whereby the paraffins at the proper melting point are removed from the materials at other melting points and from the oil admixed with the wax at that point in the manufacturing operation.

Q. Can you tell us briefly how that sweating is accomplished?

A. The sweating is accomplished by introducing the slack wax, which is a mixture of wax and oil, into pans of rather large area but shallow, where, by a careful control of temperature, the law melting point of the material and the oil is selectively drained from the mass of solid crystalline wax.

Q. And that which remains is the paraffin wax that you are referring to?

A. That which remains after the sweating process has been carried out a number of times, over and over again, that is, is the paraffin wax. The wax, after a complete
2317 sweating operation, contains only a trace of residual oil, and this oil is completely removed by the final filtration.

Q. How is this filtration accomplished?

A. This filtration is accomplished by percolating the molten wax through bone black.

Q. Through what?

A. Bone black.

Q. Is that a substance?

A. Bone black is a very pure form of carbon.

Q. You speak about it being molded into cakes. Does that process occur after the filtration process that you have described?

A. Yes.

Q. Now, during the course of this manufacturing or refining operation is heat applied in the various stages?

A. Heat is applied in the various stages in order to—in the first place, to separate the paraffin distillate from the crude oil, and, secondly, to maintain the subsequent wax oil mixtures and eventually the pure paraffin wax in a molten state.

Q. Immediately prior to its being pressed into cakes what is the temperature at which the paraffin is maintained?

A. Approximately 160 degrees Fahrenheit.

2318 Q. Well above the melting point?

A. Well above the melting point.

Q. Of what materials are the machines made which are used in this manufacturing or refining process that you have described?

A. The entire system is carried out quite generally in

steel or cast iron equipment, all of which is enclosed, the process being in the early stages largely a continuous one.

Q. That is, without manual assistance the machinery does the work?

A. No human hand at any time touches any of the material throughout the operation or process.

Q. And does that apply to the entire process that you referred to?

A. It does until the cakes are finally—of the finished wax are finally removed from the molding machine and packed in suitable containers, which is a hand operation.

Q. And in what form is the paraffin wax that is shipped to Chemung, Illinois, by your company; that is, when it comes from the molding machine?

A. It is in eleven-pound cakes.

Q. And about what size are these?

A. Approximately sixteen inches by eleven inches
2319 by an inch and a half to two inches thick. That is the approximate size of the cake; I don't recall the exact dimensions.

Q. Now, you referred to that being removed from the molding machine being a hand operation. Do you mean that someone actually picks up the cake or lifts it from the machine, or just what is that process?

A. The cake is actually lifted from the mold and packed into a container.

Q. And just how is that process accomplished? When you refer to its being packed, are you familiar with the packing of this specific paraffin that we are discussing?

A. The paraffin is removed from the molding machine and immediately packed in paper-lined burlap bags.

Q. Right next to the paraffin is what?

A. Is paper

Q. Of what kind? Is it a wax paper or parchment of some kind?

A. It is a treated craft which is sealed to the exterior burlap bag.

Q. Is that paper kept under sterile conditions in your plant?

A. Yes, in so far as that is practicable.

Q. Just how is that accomplished?

2320 A. You have reference to the keeping of the container?

Q. Yes, of the container into which this wax in these eleven-pound cakes is packed?

A. Well, the bags as received are in sealed or closed packages, and they are kept in that shape in rooms wherein practices of cleanliness are observed, and these packages are not opened, nor are the bags opened up to receive wax, until immediately prior to the introduction of the wax into the paper container which comes in contact with the wax, being inside of the burlap bag.

Q. What is the practice with respect to the cleanliness of the operator who performs this operation of removing the wax?

Mr. Schaefer: Well, I object to that.

Mr. Rall: You may answer subject to the objection.

A. Why, the operators who remove the wax from the molds and place them in the paper containers are men who are regularly cautioned to observe good practices with respect to personal cleanliness and particularly to keep their hands free from dirt, and during the operation they do not handle any material other than the wax and the receiving bags.

Q. You referred to "good practices." Will you state, subject to the same objection that has been made,
2321 specifically what the instructions to these men are?

A. Good practice in our estimation involves regular washing of the hands with soap and water at specified intervals.

Q. Are these men who remove the wax under the supervision of a superior?

A. They are under the supervision of a foreman.

Q. Are you acquainted with the chemistry of the completed product that you have described?

A. I am.

Q. Will you tell us what its chemistry is?

A. Paraffin wax is substantially a mixture of crystalline, waxy hydrocarbons, characterized as being members of the saturated straight chain paraffin family best represented by the generic formula Cn H2n + 2 and having an average approximate carbon atom content of 24 to 28.

Q. Are there any regulations or formulae which describe or regulate the substance that you are discussing?

A. Yes. Those regulations include the specifications of our own corporation, and this wax is manufactured so as to meet the requirements of the U. S. Pharmacopoeia.

Q. Are the standards of the U. S. Pharmacopoeia published from time to time?

A. They are.

2322 Q. Are they published periodically?

A. To the best of my knowledge, at rather irregular intervals, depending upon the necessity for revision.

Q. That consists, does it not, of definitions of various types of substances, chemical definitions?

A. It does.

Q. Does that contain a definition of the paraffin wax, the substance that you have described?

A. It does, under the general heading "Paraffinum."

Q. You have before you a volume entitled: "Pharmacopoeia of the United States, Eleventh Decennial Revision," bearing the Roman numeral XI., which appears to be an official copy, No. 137111, entered, according to Act of Congress, in the year 1935 by the Board of Trustees of the United States Pharmacopoeial Convention in the office of the Librarian of Congress at Washington. Is this volume the one that is commonly referred to as the U. S. Pharmacopoeia?

A. It is.

Q. Will you refer us to the page upon which you find the standards relating to paraffin wax which describe the wax which you have just told us of?

A. Page 276.

Q. Subject to the right of the defendants to de-

2323 mand the production of an original volume, this volume being property of the Socony Vacuum Corporation, which the plaintiff agrees to produce if required, I will ask you to read into the record the standard contained in that volume for the paraffin wax which it is your testimony this product you have described complies with?

A. (reading.)

"A purified mixture of solid hydrocarbons obtained from petroleum.

"Description and Physical Properties—A colorless or white more or less translucent mass, frequently showing a crystalline structure. It is without odor or taste and is slightly greasy to the touch. Paraffin is insoluble in water and in alcohol; slightly soluble in dehydrated alcohol; frequently soluble in chloroform, in ether, in benzine, in petroleum benzin, in carbon disulphide, in volatile oils and in most warm fixed oils.

"Tests for Identity and Purity—Specific gravity, about 0.900 at 25 degrees Centigrade. It melts between 50 degrees and 57 degrees Centigrade (page 455). When strongly heated, paraffin ignites, burns with a luminous flame and deposits carbon.

2324 "Heat about 0.5 grams of paraffin in a dry test tube with an equal weight of sulphur: the mixture evolves hydrogen sulphide and becomes black due to the liberation of carbon. Shake melted paraffin with an equal volume of hot alcohol: the separated alcohol does not redden moistened blue litmus paper (acids). Pour 5 c.c. of paraffin at a temperature just above its melting point, and 5 c.c. of sulphuric acid into a glass stoppered cylinder which has previously been rinsed with sulphuric acid and heat in a water bath at 60 degrees Centigrade for ten minutes, shaking the mixture at intervals of one minute: the paraffin remains unchanged in color and the acid does not become darker than pale amber (carbonizable substances)."

Q. The quotation that you have read refers to the melting point as being from 50 to 57 degrees Centigrade. Can you translate that for us into Fahrenheit?

A. Approximately 122 to 135 degrees Fahrenheit.

Q. The quotation that you have read refers to the deposit of carbon and the burning of the paraffin in case it is strongly heated.

A. With sulphur present.

Q. With sulphur present. Heating this paraffin
2325 wax to a high temperature, that causes it to disintegrate, does it?

A. Yes.

Q. And at about what point Fahrenheit does it commence to change its form?

A. The temperature at which incipient thermal decomposition takes place is approximately 650 degrees Fahrenheit.

Q. And what occurs at that point?

A. If no air is present, or oxygen, the wax thermally decomposes, forming hydrocarbons of lower molecular weight, less saturated and perhaps some free carbon.

Q. If oxygen is present, what occurs?

A. If oxygen is present and the material is ignited at that temperature the hydrocarbon will be completely converted to carbon dioxide and water.

Q. The paraffin wax that you have described I under-

stood you to say complies with the definition of paraffin wax as given in U. S. Pharmacopoeia XI.; is that right?

A. It does.

Q. Are you also familiar with the standards of U. S. Pharmacopoeia X., which preceded this?

A. I am.

Q. Would your testimony with respect to that be the same?

2326 A. It would be.

Mr. Rall: Now, I will ask that the Notary mark this carton as "Plaintiff's Exhibit 1" for identification.

(The carton referred to was marked for identification "Plaintiff's Exhibit 1, April 25, 1939.")

(Then there followed some discussion off the record.)

Q. I show you Plaintiff's Exhibit 1, identified by the Notary, and ask you to state what occurs when a carton of that type is immersed in the paraffin wax that you have described, heated to a point between 170 and 185 or 190 degrees Fahrenheit and then removed and cooled?

A. Depending upon the time of immersion, there is a certain amount of penetration of the wax into the board, and even in a brief time sufficient penetration to give good adhesion of the surface film, which is a continuous film, which is subsequently left upon the carton after removal from the wax bath during the draining period.

Q. When you refer to adhesion, you mean the adhesion of the paraffin wax to the fiber board; is that correct?

A. I do.

2327 Q. Is there any chemical reaction connected with this process that you have referred to?

A. There is not.

Q. Is the wax after the immersion and subsequent cooling of the same chemical composition that you described in your testimony, referring to the paraffin wax manufactured by your company?

A. It is.

Q. With respect now to the properties of a fiber board such as Plaintiff's Exhibit 1, before and after the immersion in paraffin, with respect to liquids, the effect of liquids such as water or milk on the exhibit, what, if any, change does this paraffining process bring about?

Mr. Schaefer: What is the question?

(Question read by the reporter.)

Mr. Rall: Is my question clear to you?

The Witness: I think so, yes.

A. The impregnating and coating operation produces a continuous film which prevents any contact between any aqueous phase liquid placed in that container and the original paper fibers.

Q. In other words, the paraffin coating makes the paper fiber impervious to a liquid such as water or milk; 2328 is that correct?

A. It does at temperatures below the melting point of the wax.

Q. As I understand your testimony, below the melting point of wax it is impervious to water or what you have described as an aqueous phase liquid?

A. Yes.

Q. And is milk included in that definition?

A. Yes.

Q. Have you given any study to the question of the coating of fibers and papers with this paraffin wax manufactured by your company?

A. Yes; a very considerable amount of technical work has been directed to this problem in our laboratories.

Mr. Schaefer: I object to that because it is not responsive.

Q. Have you yourself made studies in that connection?

A. I have, personally, and additional studies have been made under my direction.

Q. Is this process that you have described of coating with paraffin a fiber carton such as Plaintiff's Exhibit 1 substantially the same process that is used in what we call wax paper or paper cups or things of that type?

2329 Mr. Schaefer: I object to that as immaterial.

Mr. Rall: You may answer subject to the objection.

A. It is.

Q. For what purposes is the paraffin wax manufactured by your company, which you have described, used?

Mr. Schaefer: That is also objected to as immaterial.

Mr. Rall: You may answer subject to the objection.

A. It is very largely used in the paper industry as an impregnating and coating material. It is also used as a household sealing-wax for fruit and jelly jars. It is used as an ingredient of wax polishes and finishes. It is used as an ingredient in the sizing of paper. It is used as an

electrical insulating material, and for many other purposes.

Q. Does your company sell wax for the purpose of sealing fruit jars?

Mr. Schaefer: That is objected to as immaterial.

A. We do.

Q. And does that have a trade name?

A. Yes, in various territories it is known as either Parowax or as Paraseal wax.

Q. In what size cakes are those sold?

Mr. Schaefer: Do you want me to object every time?

Mr. Rall: No; your objection to the materiality of this testimony stands.

The Witness: Will you repeat that question?

(Question repeated by the reporter.)

A. In quarter-pound cakes, packed four to the one-pound box.

Q. And the box is substantially the size of a pound of butter, is it not?

A. It is.

Q. And the wax so used is melted by the housewife and poured on the top of fruit for the purpose of sealing it in the preserving process; is that true?

A. That is correct.

Q. Is this product you referred to as Parowax, sold for the purpose mentioned, the same or a different product than the paraffin wax that you shipped to Chemung, Illinois?

A. It happens to be identically the same material as that which has been shipped to Chemung, Illinois, for the account of the Dean Milk Company.

Q. The difference being, I take it, in the form of the size of the cake and the method of packaging the article?

A. That is correct.

Q. You referred to the use of this paraffin wax in
2331 the impregnating and coating of papers by the paper industry. What is the purpose of that?

A. Probably the most important purpose is to render the material being coated or impregnated moisture proof.

Q. And is the reason that that material, when so impregnated or coated, is moisture proof the same reason that you have given for your statement that when Plaintiff's Exhibit 1 is immersed in wax it becomes impervious to an aqueous phase liquid?

A. Yes.

Q. Will you give us so far as you can think of offhand examples wherein paraffin wax is used for that purpose in other products or packages containing liquids or intended for liquids other than a container for milk?

Mr. Schaefer: That is also objected to.

Mr. Rall: Your objection stands as to the materiality until I tell you that I am changing my line of questions.

Mr. Schaefer: Fine.

A. Containers intended for the packaging of such materials as ice cream and cheese; containers intended to hold for a brief period of time coffee, water, tea or other beverages and so forth, represent good examples.

2332 Q. Would the tiny sealed cup containers that the air lines use for the cream, dispensing of cream to their passengers, be an example of what you have referred to, or are you acquainted with that?

A. At least some of them would be. I know of some which are paraffin wax coated.

Q. Are the paper cups that are used for individual drinking cups largely within the class of products that you would refer to?

A. They are.

Q. Do you know the names of any that are impregnated with the wax manufactured by you?

A. You mean the trade names?

Q. Yes.

A. No, I do not. I cannot answer that question

Q. Is there any difference between the penetrating powers of milk and cream into a paraffin coated fiber board and the penetrating powers of water?

Mr. Schaefer: I object to that for the additional reason that the witness has not been qualified to express an opinion on that subject.

A. Technically there is some difference.

Q. And what is that difference, if you know?

2333 A. Milk contains a certain amount of butter fat in suspension in the water, which butter fat has a greater dissolving effect upon the wax coating than ordinary water, and therefore a container coated with wax will hold water generally for a longer period of time without failure than will a similar container filled with milk or cream.

Q. Does the depth or thickness of the coating of the paraffin on the container have a relationship to the time that

the container remains impervious to penetration by milk or cream?

A. Yes.

Q. And the thicker the coating, the more impervious it will become, or the longer will be the time that it will retain its imperviousness to penetration?

A. Other things being equal, that is correct.

Q. Have you or has anyone under your direction—I think it is fair to say now that I am changing my line—have you or has anyone under your direction made any tests with respect either to the desirable thickness of the coating of paraffin on milk containers or as to the time, depending upon the thickness, that the container remains impervious to the absorption of milk?

A. Yes.

2334 Q. Have those studies been based upon the thickness of the paraffin by measurement or upon the immersion time in the paraffin bath of the carton?

A. There has been no actual measurement of the thickness of the film, but the thickness of the film has been approximated by observations connected with the details of the method of application of the film and the amount of wax applied to a unit area of board, the higher the temperature and the longer the period of immersion giving greater penetration and lesser surface film, and the shorter the time of immersion and the lower the temperature of impregnation, followed in some cases by chilling, giving increasingly thicker films, thicker continuous films of wax upon the surface.

Q. What is the effect on bacteria that might be present either on the surface of the fiber board, such as Plaintiff's Exhibit 1, or in the paraffin of the heating process and the immersing of Plaintiff's Exhibit 1 in the paraffin bath?

Mr. Schaefer: That is objected to on the ground that the witness has not been qualified to answer that question.

A. Although I am not a bacterialogist, I understand from reputable sources that paraffin is an active sterilizing material, particularly at the temperatures of applica-

2335 tion referred to.

I agree with Mr. Schaefer that I am not in a position to answer that question. You should get a bacterialogist to answer it.

Mr. Rall: I think you may cross-examine subject to one question that I will ask on further direct.

Cross-Examination by Mr. Schaefer.

Q. When you were referring to the impregnation of paper and the thickness of the resulting coating from immersion in paraffin, what temperature ranges and what time intervals did you have in mind?

A. We work in temperature ranges from 140 to 220, perhaps 240 in one or two isolated cases, degrees Fahrenheit for times of immersion varying from a second up to a minute or longer, with various cooling methods used after immersion, such as cooling at room temperature, cooling under forced air draft, and cooling by passing through cold water.

Q. And those were the temperature ranges and those were the time intervals that you had in mind in your direct examination?

A. Yes. That time referred only to time of immersion.

Q. Yes. Now, you have testified as to the melting point of paraffin and as to the decomposition point. What
2336 happens to paraffin when heat is applied to it between those two points?

A. Practically nothing so long as there is no contact with oxygen or other active chemical substance.

Q. At what temperature will oxidation of paraffin begin?

A. Oxidation of paraffin will begin at relatively low temperatures. It is only really significant at temperatures—

Q. No; just answer the question that I asked, Mr. Keyser.

A. At relatively low temperatures. Well, I can only answer it by saying that no oxidation, no appreciable oxidation will occur below the melting point of wax. The wax in the molten state in contact with air will oxidize to a greater or lesser extent, depending upon the temperature and the area exposed to the oxygen.

Q. And will it depend also upon the length of time that heat is applied?

A. Yes; it depends upon the time factor plus the factor of the area exposed to the air.

Q. Plus heat?

A. Plus heat, plus temperature. There are three variables there.

2337 Q. What is the nature of the products of the oxidation of paraffin?

A. The paraffin, when it oxidizes, eventually forms the usual organic oxy materials, such as acids, esters, ketones and the usual insoluble petroleum sludges.

Q. How acid are those products of oxidation, Mr. Keyser?

A. They are typical weak organic acids.

Q. Can you give us their strength?

A. In terms of what?

Q. In terms of usual acid measurements.

A. The usual acid measurement is the effect upon the PH of water.

Q. Water is neutral?

A. Pure water is neutral. They are relatively insoluble and have a very slight depressing effect upon the PH of an aqueous solution, but they are regarded as very weak organic acids.

Q. What would you say their PH measurement is?

A. That would depend upon their concentration and their nature.

Q. That would depend upon the length of time exposed to heat?

2338 A. To a certain extent, yes, and the concentration in the water and the concentration in the wax. That is, you have got to bring the wax in contact with the water, and then a certain amount of those materials would have to be leached out into the water.

Q. And would you say that those products of oxidation have an acid measurement of PH5?

A. They might have, yes.

Q. You referred to the temperature maintained during the manufacture of the paraffin. Did I understand you to say that 160 degrees is uniformly maintained?

A. No; that was the temperature at which the wax was molded, poured into the molds.

Q. And that is uniformly maintained?

A. That is uniformly maintained.

Q. Is paraffin itself a bactericidal agent?

A. Again, I would refer to the fact that I am not a bacteriologist, but it is my understanding that it is.

Q. And, referring to the waterproofing action of paraffin when applied to paper, does the paraffin uniformly impregnate the paper?

A. Reasonably, yes.

Q. You mean it does not uniformly impregnate the paper?

2339 A. I mean reasonably so it does impregnate the paper.

Q. But there is no absolute uniformity of impregnation?

A. Nothing in this world is absolutely uniform.

Q. Including the impregnation of paper by paraffin?

A. Pardon?

Q. Including the impregnation of paper by paraffin?

A. That goes without saying.

Q. Does the paraffin coat each fiber of the paper?

A. Each fiber of the paper with which it comes in contact. Of course, it may not penetrate to the center of the board, but if it comes in contact with the fiber it quite uniformly coats it.

Q. You enumerated all of the practices of personal cleanliness and the sanitary practices that are engaged in by the men who handle the molten wax when packing it?

A. I referred to those practices, yes.

Q. And you referred to all of them?

A. I referred only to the specific practice that they wash their hands thoroughly with soap and water.

Q. And that is the specific practice that is engaged in by the men?

A. That is the specific practice.

Q. Are there any other practices engaged in?

2340 A. No. And I think it is significant to note here—

Q. The answer is "No," Mr. Keyser.

A. Well, I want to modify that "No."

Q. All right.

A. No, because paraffin itself is regarded as quite a sterile material, and a plant or building wherein only paraffin wax is handled is a place where the maintenance of a reasonable, commercial sterile condition is rather a simple process.

Mr. Schaefer: If that is on the record, I want to object to the last portion of the last answer, everything beyond "No," as unresponsive to the question.

Q. Who manufactures the treated craft paper which is used in the burlap bags?

A. I don't recall offhand. I have known, but I have forgotten.

Q. And those bags, how do they leave your plant?

A. How do they leave our plant?

Q. Yes.

A. With the wax in them?

Q. Yes.
A. They are—
Q. I mean by truck, by rail? What happens?
2341 A. They are either packed in carloads, or they may leave by truck or whatever the method of delivery to the customer by our warehouse is.
Mr. Schaefer: That is all.

Redirect Examination by Mr. Rall.

Q. How are these men dressed who handle paraffin wax?
A. In work clothes which are used in the premises only.
Q. They change their clothes when they come in?
A. They do.
Q. And when they are not at the plant where are those clothes kept?
A. In lockers provided for the purpose.
Q. Do they wear aprons?
A. They do not.
Q. As part of your direct examination this is what I wanted to ask. It will be subject to cross-examination. Assuming that a fiber carton such as Plaintiff's Exhibit 1 is immersed in a paraffin bath heated to a temperature ranging from 165 to 185 degrees, with the bottom sealed five seconds down and five seconds up, and then is cooled for one minute at a temperature of approximately 40 degrees by artificial cooling—
Mr. Schaefer: Forty degrees what?
2342 Mr. Rall: Fahrenheit.
Q. (Continuing.) —do your studies give you an opinoin as to what length of time a carton so treated with your paraffin wax will be impervious to the absorption of milk or cream?
Mr. Schaefer: That is objected to. The witness has not stated that he has made any studies directed toward that thing.
Mr. Rall: Yes; he says he has.
A. Yes.
Q. Of what did the studies consist which give you an opinion on that subject?
A. Studies with containers so coated, both in the laboratory and in commercial operation, and the usual standard tests with a number of containers containing the liquid or

by experiments at regular periods of time to develop the time of failure.

Q. And by "failure" what do you mean?

A. Softening of the board, indicating that moisture has broken through the wax coating, penetrated the board, or actual leaking.

Q. Are these some of the tests that you previously described you made on the general subject of the coat-
2343 ing of papers?

A. They are.

Q. Will you state your opinion as to the length of time, after a carton has been treated as I described in my previous question, that the carton so coated would be impervious to penetration through the paraffin of cream or milk?

A. Under the conditions that you have described, and from the work which we have done, I would expect that such containers would be satisfactory for a period of from one to two weeks.

Mr. Schaefer: That is objected to as not responsive.

Q. Now, when you say "satisfactory," you mean that it would not develop impregnation through the paraffin of the fiber board; is that correct?

A. That is correct.

Q. I mean absorption of milk or cream into the fiber board.

A. That is correct.

Q. And when you say you would expect—

A. (Interposing.) I mean that is what our tests have indicated.

Q. And that is your opinion?

2344 A. That is right.

Mr. Rall: You may cross-examine.

Recross Examination by Mr. Schaefer.

Q. How did you determine when there was penetration in those tests?

A. As I said, in the case where we work with the container itself, the indication is when a soft spot or bulge appears and you can immediately detect penetration by water into the fiber by a certain amount of discoloration and softening of the board. Also, in some cases you also get leakers. Both phenomena are observed.

Q. And that is the type of penetration that you are talking about?

A. That is right.

Q. And the only type of penetration that you are talking about?

A. No. On the other hand, studies have been made with board—

Q. Your tests, now, Mr. Keyser.

A. Our tests have also included studies with board waxed, not made up into containers, but immersed in the liquid in question, and samples removed at regular intervals, the surface moisture being removed and the specimen weighed to determine whether or not there has
2345 been any penetration of moisture into the board through the wax film which would result in an increase in weight.

Q. And you have found a period of two weeks—

A. Under the conditions described, with this type of board, and with that type of waxing, I would expect that there would be no material increase in weight for a period of one week, and, in some cases, possibly two weeks. I gave that as a range.

Q. Now, are the results of those experiments uniform?

A. Quite reasonably uniform, provided the application of the wax is uniform. That is the most critical point in the actual, technical work—to obtain a uniform application of the wax.

Q. Well, would you call a variation of one week to two weeks reasonably uniform?

A. I have given that average because it is impossible, on the basis of the brief description on the method of the application of the wax, to exactly correlate it with laboratory experiments.

Q. Do your laboratory experiments indicate a variation?

A. There is very little variation, provided the wax is uniformly applied. That is, you take two pieces of board to which wax has been applied, the same wax in
2346 exactly the same fashion. The results will check each other very satisfactorily; I should say, on the average, within five to ten per cent.

Q. Suppose you took containers?

A. Pardon?

Q. Suppose you took containers?

A. There, too, the results have been quite satisfactory from the point of view of uniformity.

Q. Has there been as much uniformity in the case of containers as in the case of boards?

A. In the case of a container there are so many more possibilities of slight deviations that the uniformity will not be as great as with a single piece of board immersed in the liquid.

Mr. Schaefer: That is all.

Mr. Rall: That is all.

Plaintiff's Exhibit 1 referred to in the testimony above is attached hereto.

Paul V. Keyser, Jr.

Subscribed and sworn to before me this 5th day of May, 1939.

Irvin Taber,
Notary Public,
Bronx County No. 39,
N. Y. County Clerk's No. 323.

(Seal)

Commission expires March 30, 1941.

2347 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—) * *

CERTIFICATE.

State of New York, }
County of New York. } ss.

I, Irvin Taber, a Notary Public, duly commissioned and acting in and for the County of New York, State of New York, do hereby certify that the foregoing deposition is a true record of the testimony given by the witness Paul V. Keyser, Jr., upon his oral examination before me, pursuant to notice dated April 15, 1939, at the office of Mudge, Stern, Williams & Tucker, 20 Pine Street, New York, N. Y., on Tuesday, April 25, 1939, commencing at 2:00 o'clock, p. m.; that the said witness was duly sworn by me before testifying and that his testimony was
2348 personally recorded by me stenographically and transcribed under my direction, and that when the aforesaid testimony was fully transcribed the deposition was

submitted to the witness for examination and was read and signed by him in my presence, at which time he was again sworn by me.

I further certify that there appeared at the taking of said deposition Gariepy & Gariepy, Esqs., attorneys for plaintiff, by Owen Rall, Esq., of counsel; and Barnet Hodes, Esq., corporation counsel of the City of Chicago, by Walter V. Schaefer, Esq., and Charles P. Hogan, Esq., assistants corporation counsel.

I further certify that I am not of counsel nor related to any of the parties in this action, nor am I interested in the outcome of this suit.

In testimony whereof, I have hereunto set my hand and seal this 5th day of May, 1939.

I. M. Taber,
Notary Public,
Bronx County No. 39,
N. Y. County Clerk's No. 323.

(Seal)

Commission expires March 30, 1941.

23481/2 No. 96533.

State of New York, }
County of New York. } ss.

I, Archibald R. Watson, Clerk of the County of New York, and also Clerk of the Supreme Court in and for said county, do hereby certify that said Court is a Court of Record, having by law a seal; that Irvin Taber, whose name is subscribed to the annexed certificate or proof of acknowledgement of the annexed instrument was at the time of taking the same a notary public acting in and for said county, duly commissioned and sworn, and qualified to act as such; that he has filed in the Clerk's Office of the County of New York a certified copy of his appointment and qualification as Notary Public for the County of Bronx with his autograph signature; that as such Notary Public, he was duly authorized by the laws of the State of New York to protest notes, to take and certify depositions; to administer oaths and affirmations; to take affidavits and certify the acknowledgement and proof of deeds and other written instruments for lands, tenements and hereditaments, to be read in evidence or recorded in

this state; and further, that I am well acquainted with the handwriting of such Notary Public and verily believe that his signature to such proof or acknowledgement is genuine.

In testimony whereof, I have hereunto set my hand and affixed the seal of said Court at the City of New York, in the County of New York, this 22nd day of May, 1939.

Archibald Roberts,
(Seal) *Clerk.*

2349 Plaintiff's Exhibit 1 is forwarded as a Physical Exhibit.

2353 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

(Filed May 24, 1939. Hoyt King, Clerk.)

Depositions of witnesses taken in behalf of the Plaintiff pursuant to notice served on the Defendants on April 15, 1939, at the offices of Dechert, Smith and Clark, Esqs., 1320 Packard Building, Philadelphia, Pa., on Thursday, April 27, 1939, at 10 o'clock a. m., before Lewis A. Bicking, a Notary Public in and for the Commonwealth of Pennsylvania.

Present:

Gariepy and Gariepy, Esqs., by Owen Rall, Esq., representing the Plaintiff.

Barnet Hodes, Esq., corporation counsel of the City of Chicago, by Walter V. Schaefer, Esq., and Charles P. Horan, Esq., assistants, corporation counsel.

2354 HERBERT M. PACKER, having been duly sworn, was examined and testified as follows:

Direct Examination.

Mr. Rall: To save time, the plaintiff agrees that all objection to the materiality of any testimony during this deposition may be made when the deposition is offered in evidence without the necessity of counsel at this time interposing such objection.

Mr. Schaefer: All right.

By Mr. Rall:

Q. Mr. Packer, will you state your name?

A. Herbert M. Packer.

Q. And where do you reside?

A. 1717 North 41st Street, Philadelphia.

Q. How old are you?

A. 48 and a half.

Q. What is your business or profession?

A. Civil engineer by profession. My position is chief of the division of housing and sanitation in the Department of Public Health, City of Philadelphia.

Q. How long have you been in that position?

A. I have been Chief since April, 1925.

Q. You attended high school?

2355 A. Yes, sir. I attended the Philadelphia Grammar Schools, the Central Manual Training High School in Philadelphia, graduating in 1908. At the University of Pennsylvania I took the course rating the degree of Bachelor of Science in Civil Engineering, and graduated in June, 1912.

Q. At the University did you specialize in any particular branch?

A. I specialized in sewage disposal and public health work.

Q. After you were graduated, what did you then do?

A. I went to work for the City of Philadelphia as a laborer.

Q. Was that your classification?

A. That was my classification and my work.

Q. What was the nature of that work?

A. I worked in what was known as the bridge and sewer division, sewer maintenance work and bridge maintenance work, putting down bridge flooring, and cleaning sewers, repairing sewers on the inside.

Q. From that time until the War, will you describe just briefly what positions you held with the City?

A. I went through the grades of Assistant Foreman, Foreman, Inspector, Engineering Inspector, Assistant
2356 Engineer of Sewers, then assistant engineer in land drainage work, which position I held when the War broke out in 1917; then mosquito elimination work and land drainage work in the southern sections of our city.

Q. During the war time what did you do?

A. I was commissioned a first lieutenant in the Sanitary Corps, and then promoted to Captain; went into the

service in September, 1917, and was promoted in March, 1918, went overseas in May of 1918.

Q. While you were in the Army at what points were you stationed?

A. I started at Millington, Tennessee, in an aviation camp. Then I went over to Camp Sevier at Greenville, South Carolina, and then Camp Sherman, at Chillicothe, Ohio, and then overseas.

Q. What was the nature of your work?

A. I was attached to the Medical Service doing sanitary work pretty well all over France, although quite a lot of the time I was at a hospital called Mesves Bolcy in the interior of France, a sixty thousand bed hospital, as sanitary officer for the area. It covered several square miles.

Q. When did your connection with the Army terminate?

A. I was discharged in June, 1919, and went back
2357 to work for the City in the Bureau of Health as a supervisor of sanitation in charge of investigation of all types of nuisances in the city.

Q. And how long did that work continue?

A. I kept in that job until I was appointed Chief in April, 1925.

Q. When you were appointed in 1925 as Chief of the Division, state briefly what your duties were.

A. That took in many different classifications of work, nuisance work, housing or multiple dwelling work, and plumbing work. In the middle of 1927 there was a consolidation of divisions, and the division of milk inspection and the division of meat inspection was made part of the division of housing and sanitation, and I took charge of that work.

Q. How long were you in charge of milk inspection work?

A. Until 1936, at which time meat and milk were consolidated into a division of its own.

Q. Who is now the head of that division?

A. Dr. Yunker, Elkan Yunker. He is now Chief Vetinarian.

Q. When you became milk inspector—I am just using that regardless of what your title was—what, if anything, did you do by way of study, or travelling, and so
2358 forth, to acquaint yourself with the duties of your office?

A. My experience in milk at that time had been largely

theoretical. I had no practical experience, and I had to gain a lot of it since I was going to have charge of the milk inspection in Philadelphia, I had to get a lot of it in a hurry. I spent the next year doing nothing but studying milk, going around to all our plants, practically living in them, living in our farms finding out what I could find out about milk inspection, and supply, and equipment.

Q. You also read literature on the subject?

A. Oh, yes, I think I read everything it was possible to get.

Q. About what is the approximate population of the City of Philadelphia?

A. It is approximately two million.

Q. What is the method of delivering milk? There is house to house delivery?

A. We have two main methods, house to house delivery; that is, for household milk, house to house delivery; and store.

Q. Chain store?

A. Chain stores and independent stores.

Q. Where does the milk come from, largely?

2359 A. Well, from Pennsylvania, New Jersey, Delaware; I should say about eighty per cent of it comes from Pennsylvania, or Pennsylvania farms.

Q. At about what distance marks the limit of what you might call your milk shed?

A. 200 or 250 miles.

Q. Shipped in by train?

A. Truck, mostly.

Q. In connection with your work did you attend any meeting of public health officials, dairy shows, or anything of that kind?

A. Yes, I attended practically every dairy show, every conference that I knew of, innumerable conferences.

Q. With whom were these conferences?

A. Well, the health officials of this district have a group that meet together every month, and they discuss all sorts of topics. Milk officials have another group. There are a number of groups of officials having to do with various plans of public health work. We meet at various times. I try to attend as many of those as possible.

Q. Did you attend a conference at Geneva, New York, in July, 1937?

A. Yes, sir, I did.

2360 Q. What was that conference?

A. That was a conference called by Dr. Breed and Dr. Sanborn, of the New York Agricultural Experiment Station to discuss paper containers for milk. At that conference were public health officials, paper bottle manufacturers, paper manufacturers, and quite a few research men who had done considerable work in the field of paper bottle research.

Mr. Rall: Will you identify that with your signature?

(A leaflet entitled, "The Milk Sanitarian," marked Plaintiff's Exhibit 4, was signed by the Notary.)

By Mr. Rall:

Q. I show you what we have marked Plaintiff's Exhibit 4; a printed leaflet inserted in that exhibit is entitled, "Conference on Sanitation, paper milk containers, New York Experiment Station, Geneva, New York, July 12, 1937." Is that the report of the conference you just referred to?

A. That is correct. That is a report of the conference.

Q. For the record, being a reprint from "The Milk Sanitarian", Volume 6, number 9, September, 1937, pages 11-13, 703 Anacapa Street, Santa Barbara, California.

What, if any, study have you made, or investigation
2361 of the subject of the use of paper containers for the sale of liquid milk?

A. I have been pretty much interested in the use of single service containers for milk ever since I have been identified with milk inspection work, and since Philadelphia is possibly one of the pioneer cities of paper bottles and had for a long time one of the few successful installations of paper bottles in our city, I had an opportunity to see just how it worked out with not only the containers but with the public reaction, and public health.

Q. When were paper bottles first used in the City of Philadelphia, if you know?

A. I think they came in here shortly after I took charge of the milk section, I think about 1928 our first bottles came in here, '28 or '29, I am not quite certain of that date.

Q. In that connection, did you make some examination of the entire subject before permitting the sale of milk in those containers?

A. Yes, the first containers that came in here were the Sealrite from Fulton, New York, and the Sealcone from New York. The first bottle was one just made in the plant

at Fulton, New York, and shipped down in cartons,
2362 and the other were blanks that were shipped into the plant, and the bottle was made right in the plant. I had an opportunity to make a number of studies of those and had our laboratory make a number of bacteriological studies on them. Both bottles have been continuously used in Philadelphia since that time.

Q. Did you make any investigation of the sanitary conditions under which the paper going into those bottles was manufactured?

A. I have not been to a mill. I can't tell you anything about the sanitation of mills other than a report of conditions of mills prior to the Breed conference at Geneva, and I feel that they were at that time in pretty bad shape, that there was very little attention paid to the quality of water used; in a good many instances, to the quality of stock used; that they had not identified cardboard with any such food as milk, and the need for sanitation apparently was not evident to them up until that time. I think that opened their eyes. I think since that time the reports we have gotten from various companies—

Mr. Schaefer: Just a minute. I want to object to any statement as to reports that you have gotten as to conditions in the mills.

2363 By Mr. Rall:

Q. You may continue, subject to the objection.

A. The reports that we have gotten led us to believe that the mills have cleaned up, that the water supplies are now in conformance with the United States Public Health standards, and that the stock that is used is all virgin stock. There is no second-hand stock used. We have not, incidentally, made any inspection of mills.

(A cardboard milk container marked Plaintiff's Exhibit Number 2 was signed by the Notary.)

By Mr. Rall:

Q. I show you Plaintiff's Exhibit 2, purporting to be a quart Pure-Pak milk bottle. Have containers of that type been in use in the City of Philadelphia?

A. Yes, they have been in use in Philadelphia for five or six years.

Q. What dairy uses those?

A. Well, the main dairy using them now is the Silver Seal, or Sylvan Seal Company at 612 South 24th Street. They have just taken this type of container on in the last

few months, switching over from the Sealcone. Prior to that time they were used by a dairy up at Bordentown, or Wrightstown, I forget which, just across the line in New Jersey. They brought in a small quantity of them, 2364 not many of them.

Q. Were you in charge of milk inspection at the time the use of this particular container started?

A. That's right.

Q. At that time was it submitted to you for approval?

A. No. I went to Toledo to investigate this bottle, and to investigate the machinery that made it, and was very much impressed with the bottle and with the way it was made—

Mr. Schaefer: I object to that.

By Mr. Rall:

Q. You may answer, subject to the objection.

A. I went into it very thoroughly at that time as to how it was made, and cooling, paraffin, the type of paraffin used, brought back a number of samples, and had our laboratory analyze them.

Q. What sort of a test did they make?

A. They made bacterial counts on the inside of the containers. I am depending entirely on my memory of five or six years on that, I am not quite certain, but I think they wash tested on the inside of the bottles.

Q. Are you certain you did submit samples to the laboratory and that their report was favorable?

A. Positively, yes. I am quite certain it was 2365 favorable.

Q. From a public health standpoint, and from your experience in milk control work, can you make a comparison between the use of the glass milk bottles and paper single service containers as to what you consider the advantages of one over the other, or vice versa?

Mr. Schaefer: That is objected to upon the ground of immateriality, and upon the additional ground that such a comparison doesn't afford any competent evidence to determine the question at issue in this case.

By Mr. Rall:

Q. You may answer, subject to that objection.

A. I personally like single service containers. I feel that glass milk bottles—that our dairies are doing all that they possibly can to turn out sterile containers, but my experience is that glass milk bottles are the most abused articles in the world.

The dairies, themselves, and our Public Health Departments, for that matter, tried to prevent the abuses, consequently depending too much on the sterilization of the bottle when it gets back to the milk plant, regardless of whether it is picked up from a dump, or comes from
2366 a doctor's office. We don't have enough factor of safety in that washing and sterilization, so that I much prefer a single service container. I personally believe that the day of the glass milk bottle and the container that is reused in milk is going to be a thing of the past.

Q. You referred to abuses of glass milk bottles. Will you describe briefly what you mean by that?

Mr. Schaefer: I would like to have the same objection continue to all questions involving a comparison between the paper and glass, and also all questions dealing with the condition of glass.

Mr. Rall: That is satisfactory. Without renewing the objection, it stands to this line. Will you read the question?

(The question was repeated by the Reporter as follows:)

"Q. You referred to abuses of glass milk bottles. Will you describe briefly what you mean by that?")

A. Well, a glass built milk bottle is the handiest thing in the world for anything that you want it for. If you want to buy turpentine, coaloil, or if you want a sample for a doctor's office, a urine sample, a glass milk bottle generally is the receptacle that is used. So many of them are picked up from dumps and returned to the
2367 dairies. The dairies, themselves, leave them on the streets where they are a target for every passing dog. That doesn't happen to single service containers.

By Mr. Rall:

Q. You referred to a factor of safety in connection with the sterilization of glass milk bottles. What is the common practice with respect to the method of sterilizing glass milk bottles?

A. Well, depending on the sterilizing agent that you use. You put in enough to sterilize the bottle, but they don't have much of a factor of safety. The factor of safety as a rule is one, and if the job is done perfectly, of course, you have a sterile bottle, but if there is any slip at all, you don't have a sterile bottle, and that is very frequently the case, that with glass milk bottles you don't have a sterile container.

Q. Has your experience indicated whether or not the bacteria counts on glass milk bottles are subject to rather violent variances?

A. Yes, on all bottles, paper included.

Q. That is true with respect to them?

A. Yes.

Q. This Plaintiff's Exhibit 2 appears to be coated with a substance. Can you tell what that is?

2368 A. Well, in Philadelphia they use 100% mineral, paraffin, and I imagine that is what is on here. It seems to be.

Q. What is your opinion of paraffin as a sealing agent?

Mr. Schaefer: I object to that on the ground the witness has not been qualified to express his opinion.

By Mr. Rall:

Q. You may answer, subject to the objection.

A. I think it is a very good sealing agent. I dare say that in the ten years that I was in charge of milk, there were one hundred and fifty million quarts of milk sold in paper bottles, and we never had a record of any illness having been caused by any one—

Mr. Schaefer: That is objected to as not responsive.

Mr. Rall: I am the only one who can object on that ground, Mr. Schaefer.

By Mr. Rall:

Q. Continue.

A. I think the question had to do with paraffin.

Q. That is true, your opinion of paraffin as a sealing agent.

A. I think it is very good. My memory goes back to when I was a kid, we used to chew paraffin. It was a

2369 very common ingredient of candy at that time. We used to take paraffin, and put sugar in it, and sell it as a sort of a substitute for chewing gum, and I still think it is a very good sealer for milk containers.

Q. During the time that you have referred to when you estimate that one hundred and fifty million quarts of milk were sold in paper containers, did you have any complaints or any personal knowledge yourself of paraffined paper bottles absorbing the milk or cream?

Mr. Schaefer: That is objected to on the ground that it is incompetent evidence.

By Mr. Rall:

Q. You may answer, subject to the objection.

A. I never heard any real criticism raised of milk absorbing into the paper through the paraffin. I can see where if it stayed in the bottle for any prolonged period it might absorb into the paper, but you don't keep it in there that long.

Q. When you say a prolonged period, what time did you have in mind?

A. Well, in a couple of weeks or a month it might soften up, and the milk or cream might be absorbed into the paper.

Q. State whether or not during the time that the
2370 paper milk containers have been in use in the City of Philadephia there has been any infection, disease or epidemic which you as Public Health Official in charge of milk inspection believed or even suspected was due to the use of paper milk containers.

Mr. Schaefer: That is objected to upon the ground of incompetency.

A. None whatever.

By Mr. Rall:

Q. In connection with the glass milk bottle is paper used?

A. Yes, for the cap, for the plug paper is used, or cardboard is used.

Q. That is essentially no different in type—that is, so far as its being paper fibre is concerned—than the material in Plaintiff's Exhibit 2, is it?

A. That is true.

Q. You are acquainted with some of the uses to which paraffin covered paper or paraffin covered fibre board are put? Can you state some of the uses?

A. Well, it is used for covering these plugs, these paper plugs that are used in glass bottles.

Q. I am referring, now, also to any other common uses that you may know of.

2371 A. Yes, it is used for any number of food containers and food dispensers, paper cups, butter cartons, and all sorts of cartons for carrying foods out of stores, soups, a number of dry cereals, coffees; hundreds of food products are put into paraffin paper.

Q. Also ice cream and cheese?

A. Ice cream and cheese.

Q. Are those uses that you have referred to generally accepted by Public Health Officials throughout the country, if you know, as being sanitary?

A. Oh, yes.

Mr. Schaefer: That is objected to.

The Witness: I will say in so far as I have traveled, I have seen them in every city I have ever been in.

By Mr. Rall:

Q. Are you acquainted with the extent to which containers such as Plaintiff's Exhibit 2 are used in this vicinity outside of the City of Philadelphia?

A. Well, this one company that has just swung over to this particular type serves, taking Philadelphia as a center, westward twenty miles, eastward to the Atlantic Ocean, including Atlantic City and all the resorts south from Atlantic City to Cape May, a number of resorts along
2372 there in Cape May County; they go south, including Delaware, Wilmington, Baltimore and Washington using this container.

Q. Are these municipalities you have referred to in which milk is sold in these containers places where they have milk inspection and milk ordinances?

A. Yes, every one of them.

Mr. Schaefer: That is objected to.

By Mr. Rall:

Q. The officials in some of these places that you mentioned are officials with whom you have had conferences in connection with milk?

A. Yes, I know most of them in that area. In fact, they have very good milk laws.

Mr. Schaefer: I move to strike that out as not responsive to anything.

By Mr. Rall:

Q. State whether or not from your personal knowledge of the opinion of these various public health officials in the communities that you have mentioned, the container which is Plaintiff's Exhibit 2 is accepted by them as being a proper sanitary standard container for the sale of liquid milk at retail.

Mr. Schaefer: That is objected to upon the ground
2373 it is not the best evidence, that it is hearsay, that it is incompetent, and upon the further standing objection that it is immaterial.

Mr. Rall: Will you read the question?

(The question was repeated by the Reporter as follows: "Q. State whether or not from your personal knowledge of the opinion of these various public health officials in the communities that you have mentioned, the container which

is Plaintiff's Exhibit 2 is accepted by them as being a proper sanitary standard container for the sale of liquid milk at retail.")

A. In practically every one of the communities I know the milk law, what it calls for, and know that in every one of those communities that this package is accepted, and openly and freely sold, and I don't know and never heard of any prosecution having been instituted in any one of those areas, so that I infer very strongly that it has been accepted and approved by them.

Mr. Rall: You may cross-examine.

Cross-Examination by Mr. Schaefer.

Q. Who administers public health matters in the
2374 City of Philadelphia?

A. The Director of the Department of Public Health is appointed by the Mayor, and is in charge of all public health matters.

Q. Are your regulations with respect to milk in the form of ordinances?

A. Ordinances and state laws.

Q. Does the head of the department have any authority to make regulations in this city?

A. The Board of Health under a basic act in the City of Philadelphia of 1818 has the the right to make certain rules and regulations having to do with any matter pertaining to public health, but there are specific regulations passed by our Legislature for milk, and that act of the Legislature also gives municipalities the right to make additional rules, or additional ordinances, and we have such ordinances in Philadelphia.

Q. Do you have any regulations of milk in addition to the ordinances?

A. Yes.

Q. That is, you have both an ordinance and regulations?

A. That's right. We have an act of assembly, ordinances of council, and rules and regulations.

Q. Throughout this examination I will refer to
2375 those things collectively as Legislation, so that we won't have to enumerate it every time.

A. Certainly.

Q. What does this Legislation prescribe as to grades of milk?

A. The State Act of Assembly states that any milk sold

as whole milk can only be sold if the definition of that particular grade or trade mark is registered with the Secretary of Health and approved by the Secretary of Health.

Q. And the Secretary of Health is a state officer?

A. A state officer. The Act goes further, and permits the Secretary of Health to designate any local health officer as the agent.

Q. For the purpose—

A. For the purpose of administering the State act, and at Philadelphia, of course, the director of the Department of Public Health has been designated as the agent. When you speak of grades, you mean as A and B milk? We have such grades in Philadelphia, but they are not officially recognized.

Q. What do you mean by that?

A. Other than the fact that A milk must have cover caps, and the State Department of Health will not
2376 permit any milk to be marked A unless it meets with certain grades, but in the City of Philadelphia we don't recognize grades of milk, only two grades, good milk and bad milk. It is bottled as A and B milk.

Q. But not by virtue of any official sanction by any official body?

A. That is right.

Q. The dairyman simply decides he wants to sell his milk as A milk?

A. That's right, and he files a definition with the State Department of Health in which he states he is going to have cover caps, and that he is complying with the State bacterial count. There is no mention made of butterfat.

Q. Is any effort made to determine whether or not his milk complies with the bacterial count?

A. Only with our requirements.

Q. Who makes that?

A. The City, as agent for the State.

Q. The City checks the bacteria count of all grade A milk and all grade B milk?

A. Yes.

Q. You said those grades were not officially recognized; what do you mean by that?

2377 A. Not officially recognized by the City of Philadelphia; we have never officially recognized any grades of milk.

Q. But you do check to determine compliance with bacteria count?

A. Yes, they come up to the requirements of the Department of Health at Harrisburg.

Q. Do you have the U. S. Public Health Standard Ordinance in effect here?

A. No, it doesn't follow substantially that. Generally, it does, but not officially.

Q. Do you have farm inspection?

A. Yes, the State makes the farm inspection. The City of Philadelphia makes no farm inspection, whatever, except in the case of raw milk. We have some raw milk farms, and some certified milk farms; we do inspect those farms, but not for raw milk which is pasteurized, we don't check those farms. That is done by the State.

Q. Do you make an inspection of plants and dairies?

A. Yes, that is where we concentrate, every plant that pasteurizes milk for the City of Philadelphia.

Q. Is there legislation in effect with respect to the sterilization of glass bottles?

A. Oh, yes.

2378 Q. An effort is made by the City to determine whether or not that regislation is complied with?

A. That's true, a very rigid effort is made.

Q. And you inspect that carefully?

A. That is right.

Q. You inspect the dairies carefully?

A. Yes.

Q. To determine whether or not there is compliance with the regulations concerning the handling of glass bottles?

A. That is right.

Q. What rules and regulations are in effect concerning the handling of paper containers?

A. We have practically no regulations.

Q. What regulations do you have?

A. None other than each installation is treated individually, and we have been working more or less on the rule of common sense on paper containers.

Q. That is, you have no regulations at all in the vicinity of Philadelphia pertaining to paper bottles?

A. To paper bottles, that is correct.

Q. You feel that regulations are necessary in the case of glass?

A. Yes, and I also think that regulations are necessary

in the case of paper. I think the City of Philadelphia
2379 will have such regulations before the summer is out. I was working towards that, incidentally—

Q. I haven't asked you any questions pertaining to that.

A. Yes. Well, here is what I want to explain. You see, I have not been in charge of milk for three years.

Q. Yes.

A. And I think if I had been, if I had continued on, I would have had the regulations quite some time ago. I think they should have been in three years ago.

Q. You feel they should have been in at the time the containers were first permitted here in 1929?

A. No, I don't think so. I think in a thing like that, that you have to know what you are going to do. I think the first constructive effort made to make any regulations on these containers was the 1937 conference by Breed and Sanborn. I think after that, and what developed there, that we could all have gone along and passed regulations.

Q. Regulations were just as necessary before that conference as after, weren't they, from the Public Health point of view?

A. Not necessarily. I think that you could use a certain degree of common sense on all of it. It was certainly evident at that time that virgin board was
2380 necessary. It was necessary at that time that you bottle—

Q. To what time are you referring?

A. When they first came in here, that is what we did see, that it was virgin board, and that the temperature of the wax was high enough to insure a reasonably sterile container.

Q. Has the paper container changed since 1929 to the present day?

A. Has it changed?

Q. Yes.

A. Substantially, no, except possibly they are making a little better grade of board. I don't know that the paraffin is any better.

Q. Why is it that you feel that regulations are necessary and appropriate now and were not necessary and appropriate in 1929?

A. Well, because then the industry was just starting. I think as it goes on that there will be possibly some out-

fits that may want to put second-hand material in their board—

Q. Could they not have wanted to do that?

A. They could have wanted to do that at the start, but their stake was a little bit too high, then. They real-
2381 ized they had to put good board in at that time because they couldn't substitute. It was just as cheap to buy good board then as it was to buy poor board.

Q. But the effect of poor paper stock or poor manufacture of a container from the Public Health standpoint would have been the same in 1929 as in 1936?

A. Yes, of course, somebody had to pioneer on these things.

Q. You mean nobody knew what the regulations should have been?

A. Yes, somebody had to pioneer.

Q. Somebody had to determine what the regulations ought to be?

A. That is right.

Q. You have never made any mill inspections yourself?

A. Paper mill?

Q. Yes.

A. No, sir, never been in one in my life.

Q. You never determined, then, that virgin pulp was used in the containers used here?

A. No.

Q. Where is the paper now used in Philadelphia manufactured?

A. I couldn't tell you. I am not in charge of that
2832 department right now.

Q. Where was it manufactured when you were in charge of that department?

A. As I recollect it, I think the Cherry River, if I am not mistaken, was one of the companies that produced it. I am just thinking if there wasn't another concern; the Regal Paper Company, Regal Mills, and the Sealrite Mills in Fulton, New York.

Q. They make their own paper there?

A. They make their own paper, yes, sir.

Q. Where was that paper converted when you were in charge of this work?

A. You mean converted from the blank into the bottle?

Q. Converted from paper stock into forms for bottles.

A. That occurred somewhere in Philadelphia around 10 or 12th and Race Streets.

Q. You inspected that operation?

A. Yes, we had an inspector up there, I can't remember the name of the place.

Q. What did the inspector up there do?

A. He found that the stuff was handled in a sanitary manner.

Q. I mean specifically what did he do?

A. That I can't tell you.

2383 Q. Who was that man in 1936?

A. That was Dr. Behrens, I think, who went up and made that inspection. He went there regularly. He is no longer with the City.

Q. Where is he now?

A. I don't know where he is now, I can't tell you.

Q. Did he make that inspection under your supervision?

A. That's right.

Q. Does he still live in Philadelphia?

A. I believe so. I haven't seen him since he left the City's service—

Q. He isn't employed by the City?

A. He left the service in the latter part of 1936. I have not seen him since.

Q. Do you know what he did there when he was making his inspections?

A. No, sir, I can't tell you specifically what he did. I didn't watch him.

Q. He was making those inspections under your supervision?

A. That's right.

Q. What were Dr. Behrens' initials?

A. E. E., I think; Edward E.

Q. Now, what investigation was made in 1929 be-

2384 fore the use of paper containers was permitted?

A. The first container in Philadelphia was the Sealrite from Fulton, New York. That's a bottle that is manufactured at the plant at Fulton, New York, and shipped down in cartons. We were primarily interested in whether or not the containers as they were filled with milk were sterile, or what their bacteriological condition was, and we took in a number of cartons that were shipped in from Fulton to give to our laboratory, and we took a

number of cartons at random from the Sealrite warehouse in town here, and ran them through our laboratory.

Q. What test did you use?

A. Merely a wash test, washed them out with—

Q. Will you describe that test?

A. I can't. I didn't see it done. The laboratory worker can describe that test.

Q. What were the results of those tests as to bacterial count?

A. Well, now, quoting from memory, of, I think, three hundred containers that were done, the average bacterial count was slightly less than two colonies, and I think about forty per cent of them showed sterile. That is quot-
2385 ing from memory. I think that is substantially correct.

Q. You spoke of successful and unsuccessful installations of paper containers. What was the trouble with the unsuccessful ones?

Mr. Rall: I don't recall any such testimony.

Mr. Schaefer: I think you will find it.

The Witness: Yes, I would like to have it. If we could find that and put it into the rest of the testimony here, I can explain it. I don't—

Mr. Schaefer: Will you check that, Mr. Reporter?

Mr. Rall: I suggest we have a five minute recess while he is doing that.

(Recess for five minutes at 11:10 o'clock A. M.)

Mr. Schaefer: Will you read that part of the testimony, Mr. Reporter, please?

(Testimony was repeated by the Reporter as follows:

"Q. What study, if any, have you made, or investigation of the subject of the use of paper containers for the sale of liquid milk?

2386 A. I have been pretty much interested in the use of single service containers for milk ever since I have been identified with milk inspection work, and since Philadelphia is possibly one of the pioneer cities of paper bottles and had for a long time one of the few successful installations of paper bottles in our city, I had an opportunity to see just how it worked out with not only the containers but with the public reaction, and public health.")

Mr. Schaefer: Now, the question I asked a few minutes ago.

(The question was repeated by the Reporter as follows:

"Q. You spoke of successful and unsuccessful installa-

tions of paper containers. What was the trouble with the unsuccessful ones?")

Mr. Rall: I object, because he did not speak of any unsuccessful; his testimony was that Philadelphia had one of the successful installations.

By Mr. Schaefer:

Q. Were there any unsuccessful installations?

A. In Philadelphia, no.

Q. Were there any anywhere?

2387 A. Yes, I will tell you of an unsuccessful installation. I want to be fair in this matter. What I consider was an unsuccessful installation was in York, Pennsylvania. That is immediately west of here about sixty or eighty miles. They took paper bottles on there and put them on door steps to replace glass bottles without any attempt whatever to study the problem, and it was unsuccessful. They did learn a lot by experience. So, there is an unsuccessful installation.

Q. That is the only one?

A. That is the only one I knew of. All the others have been exceptionally successful, in my estimation.

Q. Is door to door delivery of paper containers in effect in Philadelphia now?

A. No, sir, not as a general rule. There may be some few cases of door to door delivery, but very few. We don't encourage it.

Q. Why not?

A. We feel that the paper bottle in milk sales is essentially a store proposition where you have to take advantage of your temperature and the insulation of your paper. Unfortunately, if you allow the heat to get into a cold bottle of milk in paper, it is rather difficult to get the

2388 heat out again, and that, of course, is what happens if you put a bottle of milk on a doorstep early in the morning and leave it there during the summer weather until the housewife gets up several hours later and takes it in. Unless the milk dairies go to daylight delivery where they can make a reasonably prompt transfer from refrigerated truck to home refrigerator, we are not in favor of doorstep delivery.

Q. Do you have much trouble with picking up glass bottles from dumps here in Philadelphia?

A. Yes. I dare say I still get an average of fifty requests a month from unemployed persons for permits to

pick glass milk bottles from dumps and sell them back to the dairies, or milk exchange.

Q. And that is a real problem here, is it?

A. Yes.

Q. What is the value of your sales in paper and glass?

A. I can't give it to you up to date, except approximately. There are about eight hundred thousand quarts per day household milk. I should say ten per cent of that is paper. They are rough figures. They are subject to change by Dr. Yunker, if you call Dr. Yunker. He may be able to give you that information.

Q. How many milk borne epidemics have you had
2389 in Philadelphia in the last ten years?

A. Fortunately, none. We had no milk borne epidemics in Philadelphia in the last ten years.

Q. What percentage of epidemics of contagious diseases are usually traced to their source?

A. Very few. Typhoid, generally, yes; Scarlet Fever and the other streps, no, you don't find the source. Typhoid is the only one we have any degree of success in tracing down to its source.

Q. How would it be possible to trace an outbreak of an epidemic of a contagious disease to a paper milk container?

A. Well, very frequently you do find a Scarlet Fever epidemic as a result of a dairyman, or a handler on a farm.

Q. Of course, the contamination that you get there will be—

A. All along the line, that is due to the absence of pasteurization.

Q. How would you trace it to a single container?

A. You could not trace it to a single container. When I said we had no contagious diseases traced to any paper milk container during my time with a hundred and fifty million of them, we didn't have any traced to glass, that is true, too, none of them.

2390 Q. Is it a routine matter when you are attempting to check contagious diseases and their source, to ascertain whether paper or glass is used?

A. Yes, it is. Our medical inspectors investigate in every case of reportable communicable disease, and that takes in the whole list of them. It is practically the same in all municipalities. One of the questions always asked by our medical inspectors is, "What dealer do you get your milk from?" And whether it is glass or paper,

because some of them do sell some small quantity in paper, so that we always check as to whether it is paper or glass. They did that at my request; the chief of that division did that at my request back eight or ten years ago.

Q. But in the case of a single contaminated container, would it be possible as a Public Health proposition to trace the source of an outbreak of diseease, or a single case of disease?

A. I wouldn't say a single case, no, but as a group of cases you could trace back to the particular milk dealer.

Q. But there would be no possibility in the case of a single container?

A. No.

2391 Q. Do you make reports on infant diarrhea?

A. Yes, that is made to—

Q. Is that a part of your work?

A. No, it doesn't come under my division. It comes under the division of child hygene. I don't get those reports except where there is any trouble, then it is brought up at the staff meeting.

Q. That is as a routine matter during the time you were administrator of the milk regulations in the City of Philadelphia you did not get reports of cases of infant diarrhea?

A. No, except where it would get out of line, and then I would get the reports; I mean, it would come up at the staff meeting if it ran more than usual.

Mr. Schaefer: All right, thank you, Mr. Packer.

Redirect Examination by Mr. Rall.

Q. Just a couple of questions. You stated that there are no legislative regulations as to paper bottles. Are there legislative regulations with respect to containers, generally, in which milk may be sold at retail in the City of Philadelphia?

A. Well, now, there is in the new ordinance that
2392 has come in since I let go of the milk division. There is a regulation now in our ordinance that requires that all milk containers and all milk caps, and all milk product containers shall be approved by the Director of the Department of Public Health, and shall be reviewed by our Board of Health.

Q. And at this time there is a large collection of glass containers of all types and paper containers of all types

over at the Department of Health in Dr. Yunker's office which have been submitted for approval?

A. That is correct. They have all been submitted to the Board of Health. I was at the Board meeting, I remember; I believe a number of bacterial tests were made on some new containers that came in at that time, and they have all been reviewed by the Board and approved by the Director.

Q. Does that include a container of the type of Plaintiff's Exhibit 2?

A. Yes.

Q. You stated that you did not make any determination that virgin spruce was used in the manufacture of paper board which went into the paper bottles that constituted your original installation here. Do you mean by that, that you did not personally visit the mill—

2393 A. That's right.

Q. Did you make an inquiry?

A. We made inquiry, but we did not personally visit the mill.

Q. What inquiry did you make in regard to that?

A. From the representatives of the mill, and they told us it was, and we accepted their word.

Q. The bacteriological tests that were made showed a carton reasonably free from bacteria?

A. That is right.

Mr. Rall: That is all.

Recross Examination by Mr. Schaefer.

Q. What do you mean by reasonably free from bacteria?

A. Even virgin spruce board will show some contamination which, strange as it may seem, you can't get below five hundred colonies per gram, we will say, as a standard, but where you use second-hand stock, you can't get anywhere near that, you have a much higher bacteria content. The laboratory can immediately tell whether it is spruce board or not.

Q. You mean by—

A. A microscopic examination will show it.

Mr. Schaefer: That is all, Mr. Packer.

2394 Mr. Rall: Thank you very much.

(The signature of the witness was waived.)

ELKAN H. YUNKER, having been duly sworn, was examined and testified as follows:

Mr. Rall: To save time, the plaintiff agrees that all objections to the materiality of any testimony during this deposition may be made when the deposition is offered in evidence without the necessity of counsel at this time interposing such objection.

Mr. Schaefer: All right.

Direct Examination by Mr. Rall.

Q. Will you state your name?
A. Elkan H. Yunker.
Q. And your address?
A. 2344 North 18th Street.
Q. Philadelphia?
A. Philadelphia.
Q. How old are you?
A. 57.
Q. What is your business or profession?
A. Veterinarian.
2395 Q. Do you occupy any official position?
A. Chief of the Division of Milk, Livestock, Meat and Food, Bureau of Health.
Q. Of the City of Philadelphia?
A. City of Philadelphia.
Q. Will you state just briefly what your education has been?
A. After finishing grammar schools, I graduated from the University of Pennsylvania in the Veterinarian course, and engaged in practice for twelve years, and then was with the State Department of Agriculture, Burean of Animal Industry, in the control and eradication of infectious diseases in livestock, and then resigned from there to go with the City of Philadelphia in the position of a field man, you might term it.
Q. When was that?
A. I engaged with the State Department of Agriculture in 1918, and came with the City of Philadelphia in 1926.
Q. When did you become chief of the division you mentioned?

A. I was field agent up to 1936; then I was made supervisor of meat inspection in the division, and in September of last year became chief of the division.

Q. I show you a dummy bottle that has been
2396 marked plaintiff's Exhibit 2. Will you state whether or not paper milk bottles of that type are used in the sale and delivery of milk in the City of Philadelphia?

A. They are.

Q. Do you know the extent of that use, either the quantity or the percentage of the total sales in the City that are in that form?

A. I am not in a position to answer that question.

Q. Do you know whether or not this type of container is used outside of the City of Philadelphia?

A. It is used in the City and around the City of Philadelphia, in the State of New Jersey, down at the seashore, Atlantic City, Wildwood, Ocean City; all those places use this container. They are bottled principally in Philadelphia.

Q. State whether or not the use of this container in the City of Philadelphia has official approval.

A. The container has the official approval of the Department of Health.

Q. What company uses this container in Philadelphia?

A. The Sylvan Seal Company uses this type of container.

Q. Have you had any complaints about milk or cream being absorbed by the fiber of the container?

2397 Mr. Schaefer: That is objected to upon the ground of immateriality, and upon the additional ground that such evidence is not competent upon the question of whether or not the container is absorbant.

By Mr. Rall: Q. You may answer, subject to the objection.

A. I have not.

Q. Have you, yourself, used containers of this type in the home?

A. At times, yes; not steadily, but at times.

Q. It is sold largely through stores, is it not?

A. Principally through stores. I don't know of any house to house delivery at the present time with the paper container.

Q. To your knowledge, how long has a container of this type been used for the sale of milk in Philadelphia?

A. This container was approved officially on April 5,

but had been in use in Philadelphia—it had been approved prior to that time; I mean a similar container had been approved prior to that under Mr. Packer's regime, and just what time that happened I am not familiar with, but this container here was officially approved on April 5, of this year, at which time we approved a number of containers.

Q. Is that under the ordinance that Mr. Packer
2398 referred to that now requires the submission for approval of every container?

A. That's right. Our new milk ordinance of 1937 requires all milk containers, all caps, and all printing matter to be approved by the director of the Department of Public Health.

Mr. Rall: That is all.

Cross-Examination by Mr. Schaefer.

Q. You mentioned a date in April; what year is that?

A. 1939.

Q. Did you go with the state immediately after you finished your university work?

A. No, I said I was engaged in practice for twelve years after I graduated.

Q. When did you finish at the University?

A. 1906 I graduated, and I went with the State in 1918, and in 1926 I went with the City.

Mr. Schaefer: That is all, Doctor.

(The signature of the witness was waived.)

2399 FLORENCE JOHNSTON, having been duly sworn, was examined and testified as follows:

Mr. Rall: To save time, the plaintiff agrees that all objections to the materiality of any testimony during this deposition may be made when the deposition is offered in evidence without the necessity of counsel at this time interposing such objection.

Mr. Schaefer: All right.

Direct Examination by Mr. Rall.

Q. Where do you live, Miss Johnston?

A. 3909 Fairmount Avenue, Philadelphia, Pa.

Q. What is your business or profession?
A. Bacteriologist for the Board of Health.
Q. How long have you been in that position?
A. I have been bacteriologist for one year. I have been in the laboratory for seven years.
Q. Previous to your becoming bacteriologist, what were your duties with the laboratory?
A. I was a technician.
Q. A laboratory worker?
A. Yes.
Q. What schools or universities did you attend?
A. I graduated from Temple University in Phila-
2400 delphia. Before that I went to the West Philadelphia High School.
Q. Did you receive any degree from Temple?
A. Bachelor of Science.
Q. What was the general nature of the course that you took?
A. I majored in science.
Q. As bacteriologist, under whose direction do you work?
A. I work under Dr. John Laird.
Q. The head of the laboratory?
A. Right.
Q. And Doctor of Medicine?
A. Yes.
Q. I show you a carton that we have marked here for the record Plaintiff's Exhibit 2, and ask you whether you have had occasion to examine in your work cartons of similar type.
A. Yes.
Q. When was that?
A. Well, January 25, and March 15th, and the week of December 25th; it was the last week in December, I haven't the exact date.
Q. How many cartons, and how were they obtained?
A. We received ten cases of cartons with twelve con-
tainers in each case, and I took one carton out of
2401 each case.
Q. In what form were the cartons when you received them?
A. Like this (indicating), closed with a seal over it.
Q. In other words, it was a carton in the same shape that it is when milk is delivered, except that it had no milk in it?

A. No.
Q. And never had milk in it?
A. No.
Q. In other words, the cases of the cartons you received consisted of milk bottles which were in about the same condition as Plaintiff's Exhibit 2?
A. Yes.
Q. They had been paraffined?
A. Right.
Q. What did you then do with the cartons that you chose at random?
A. I put 99 cc of sterile distilled water in the carton, closed the seal again, and shook it twenty-five times, and then pipetted one cc of water from the carton on a petrie dish.
Q. Will you explain what a petrie dish is?
A. A petrie dish is a round glass dish covered with a clay top to absorb moisture, and then I poured 10
2402 cc's of Agar on to the water, and shook it so it would be disturbed and incubated at 37 degrees for forty-eight hours, and then counted it.
Q. Is that procedure that you have outlined the standard laboratory technic for bacterial counts in milk containers?
A. Yes.
Mr. Schaefer: I object to that upon the ground the witness is not qualified to say.
By Mr. Rall:
Q. You are acquainted with the requirements of the Public Health Service of the United States Government?
A. Yes.
Q. With respect to laboratory technics?
A. Yes.
Q. And the procedure that you have outlined is generally accepted?
A. Yes.
Q. As the proper method of determining bacteria counts on empty milk containers, is that correct?
A. Yes.
Q. Do you have with you the record of what your examination made as you have just stated disclosed?
A. Yes.
Q. Will you state what that was?

2403 A. The results from the examination of the ten—

Q. You have testified, Miss Johnston, to having made successive tests.

A. Yes.

Q. We are interested in knowing when you give us the results of the tests, when you made the particular test.

A. I can't give the exact date on these; it was the last week in December.

Q. Of 1938?

A. Yes.

Q. Was that the test where you had the ten cases and took one from each case?

A. Right.

Q. Will you state where that test was made?

A. In the laboratory of Hygene, Front and Luzerne.

Q. Do you have a street address for that?

A. No, it is a corner, northeast corner.

Q. State what the result of the test was that you have just referred to.

A. One carton showed one colony, but other cartons showed no colonies.

Q. From your experience in the examination of empty milk containers, is that a high or a low bacterial count?

A. That is low.

2404 Q. Now, you referred to some later tests. What were those, and how did you conduct them?

A. They were conducted in the same way, the carton was sent in along with samples of milk from that particular dairy that uses the carton, and on January 25, one carton was examined, and the count was zero; on March 15, one carton was examined, and the count was zero.

Q. How were these cartons obtained, if you know?

A. The milk inspector goes to the dairy and collects samples during the process of pasteurization, and takes also, an empty carton or an empty bottle.

Q. Are the tests you referred to tests of an empty bottle, or of a bottle which had had milk in it?

A. No, it was empty, before use. It was tested for sterilization of the bottle or container.

Q. Have you made any examination since the Sylvan Seal Milk, Incorporated, started to use this Pure-Pak container? Have you made tests of the bacteria counts of the milk, itself?

A. Yes.

Q. That has extended over a period of six or eight months, has it?

A. Yes, to January and March; before that it was out of the six months' range.

2405 Q. They were using Sealcone?

A. Sealcone. They still use the Sealcone, but they also use this (indicating).

Q. How often do you make bacterial counts on milk of the Sylvan Seal Milk, Incorporated?

A. In March and January; that is, two months lapsed there. I don't believe it is periodic, just when the milk inspector goes through with this.

Q. Do you know about how many tests you have made since they started using this container?

A. Just the two.

Q. January and March?

A. January and March.

Q. What were the results of those tests?

A. Of the empty container?

Q. No, pardon me, I am referring, now, to the test of the milk bacteria counts of the milk, itself. Will you explain just what you did to make the tests on the milk?

A. The milk would come in in the container, and after being shaken twenty-five times, one cc of milk was pipetted into 99 cc's of sterile distilled water, making a dilution of one to a hundred. That bottle was shaken, and one cc

2406 was pipetted into a petrie dish, agar is poured into the plate, and then incubated for forty-eight hours, and counted. The count in January on A milk was 200; that is, 200 per cc of milk, and on B milk it was 3100.

Q. Are you acquainted with the permissible bacteria limits on milk?

A. 30,000 for A milk, and 50,000 for B milk.

Q. These tests that you have referred to were well within the limit of bacteria count?

A. Within the limit.

Q. Are there any other tests you have a record of?

A. On March 15 the A milk gave a count of 100 per cc; B milk, 1300 per cc.

Q. Were those bacterial counts high or low?

A. They are low, lower than the January.

Q. Did you make that test in the same way you have described the milk test?

A. Yes.

Q. Do you know whether or not the method that you

used for making the test on the milk is a standard accepted method of making such tests?

A. Yes.

Q. So far as you know, is it the standard used throughout the country by Public Health laboratories?

A. I don't know what others use.

2407 Mr. Rall: That is all.

Cross-Examination by Mr. Schaefer.

Q. You testified to a dilution of one to one hundred; how many bacteria colonies would you have to have per cc in order to show in a test made that way?

A. I don't understand what you mean.

Q. You have a dilution of one to one hundred.

A. Yes.

Q. How many bacteria would you have to have per cc in order not to find sterility under that test?

A. You would have to have less than one colony.

Q. Per what?

A. Per cc.

Q. Or you would show sterility?

A. Yes—now, wait a minute, no; that is one colony per one hundred. The dilution is one to hundred, and one colony is from that dilution, which would make it one hundred count per cc; so, anything under a hundred per cc would show sterility.

By Mr. Rall:

Q. That is, anything under a hundred undiluted would, after you diluted it?

A. Yes. Our lowest dilution is one to a hundred.

2408 Mr. Schaefer: That is all.

Redirect Examination by Mr. Rall.

Q. I just want to clear up that one point, I am not sure that it is clear on the record. Before you dilute 1 cc of milk with 99 cc of distilled water—

(Discussion off the record.)

Cross-Examination (Resumed) by Mr. Schaefer.

Q. What is your dilution of the rinse container?

A. There is no dilution.

Q. Will you describe that test again?
A. We use 99 cc of water.
Q. Yes.
A. And take one cc from it, so it is colony per cc.
Q. How many colonies would you have to have in that test in order not to show sterility?
A. One.
Q. One per cc?
A. Yes.
Mr. Schaefer: That is all.

Redirect Examination (Resumed) by Mr. Rall.

Q. Your testimony previously was directed to the
2409. milk test, you thought that Mr. Schaefer was then asking you about the dilution of milk?
A. Right.
Q. And you are now talking about the rinse test for the carton?
A. The carton.
Mr. Rall: That is all. May we adjourn to 1:30, please?
Mr. Schaefer: Yes.
(The signature of the witness was waived.)
(Recess, 11:55 A. M. until 1:30 P. M.)

After recess.

Present: Counsel as before noted.

A. E. CARPENTER, having been duly sworn, was examined and testified as follows:

Mr. Rall: To save time, the plaintiff agrees that all objections to the materiality of any testimony during this deposition may be made when the deposition is offered in evidence without the necessity of counsel at this time interposing such objection.
2410 Mr. Schaefer: All right.

Direct Examination by Mr. Rall.

Q. Will you state your name, please?
A. A. E. Carpenter.
Q. What is your address, your business address?

A. 612 South 24th Street, Philadelphia.
Q. How old are you?
A. 50 years old.
Q. By whom are you employed?
A. Sylvan Seal Milk, Inc.
Q. What is the business of that company?
A. The business of that company is the processing, manufacture and distribution of milk and milk products.
Q. What plants does the company have?
A. It has a plant in Philadelphia at the address I stated, and one in Baltimore.
Q. Where does it sell its milk?
A. Do you want to know the Baltimore address?
Q. No, just the general territory in which it sells its milk.
A. Well, the milk from the two plants, of course, the geopraphical area is divided. Suppose I give you the Philadelphia area first.
2411 Q. That's fine.
A. We deliver milk daily, every day in the year except Sundays, to all of the Philadelphia area, City of Philadelphia, the City of Trenton, New Jersey; the City of Camden, New Jersey; Atlantic City, New Jersey; and to practically all of the towns and villages in southern New Jersey.
In addition, we deliver milk to the City of Wilmington, Delaware, from that plant, and west of Philadelphia a distance of approximately 50 miles to all the villages and towns in that area.
Q. Are these many or few separate towns that you are referring to?
A. Well, there are a great many towns.
Q. And how about the Baltimore area?
A. From our Baltimore plant we deliver milk to all of the City of Baltimore, and to the City of Washington, and the suburbs of the City of Washington, and also the towns that may be distributed between Baltimore and Washington.
Q. I show you what we have marked on this record Plaintiff's Exhibit 2, and ask you whether your company is now distributing milk in packages of that type.
A. You are referring to the package, or what is
2412 marked on the package?
Q. No, I am just referring to the type of the package.

A. Yes. We are now distributing milk in packages of similar type.

Q. How long have you been doing that from your Baltimore plant?

A. Two years, exclusively.

Q. What machinery do you use in the Baltimore plant for the filling of these containers?

A. We use the machine built by the Ex-cell-o Corporation, which manufactures what is known as the Pure-Pak container.

Q. Which is the container you have in your hand?

A. Which is the container I have in my hand.

Q. In your Philadelphia plant what machinery do you use?

A. We now use this same container and these identical machines, exclusively.

Q. How many machines do you have in Philadelphia?

A. Three.

Q. And how many in Baltimore?

A. One.

Q. What is the approximate capacity of your Philadelphia plant?

A. The approximate capacity of our Philadelphia plant is 120,000 quarts a day.

2413 Q. Since you have been selling milk in Philadelphia in this Pure-Pak container, have you sold a great quantity or a small quantity, or about how much? Just a rough approximation.

A. Well, we have sold hundreds of thousands.

Q. Of quarts?

A. Of quarts.

Q. Will you describe briefly the process by which your Pure-Pak machine manufactured by Ex-cell-o forms, paraffins, and fills and seals these containers?

A. I am not an engineer, but I can tell you approximately how the thing is done.

Q. All right.

A. The flat paper blanks printed are fed into the machine on a tray, about fifty at a time—

Mr. Rall: I will interrupt. Will you sign that?

(A flat paper blank for a milk container was marked Plaintiff's Exhibit 3, and signed by the Notary.)

By Mr. Rall:

Q. I show you Plaintiff's Exhibit 3. When you refer to a flat blank, it is this type?

A. That is exactly what I refer to.

2414 Q. Now, continue.

A. The machine automatically forms this blank into a paper container by sealing the bottom. The machine then automatically immerses the paper container into a paraffin bath heated to 177 degrees—

By Mr. Schaefer:

Q. Just a moment. What are you reading?

A. I am reading from notes which I got from my chief engineer within the last hour. I had him check up specifically, particularly as to the degrees of temperature which we were running now, and which is usual. I am an executive vice-president of the company, and I would have to refer to my technicians.

Q. That is, you are not testifying from your own knowledge?

A. Well, I know that this is approximately so; these figures are approximately so.

By Mr. Rall:

Q. You saw the thermometer yourself yesterday with me, didn't you?

A. Yes, I am watching the thermometer all the time. As a matter of fact, the reason I am giving the figure of 177 degrees is because that was the figure that was on the thermometer today, whereas sometimes it is 180 de-

2415 grees, sometimes it is 185, and it might be 176. I wanted to get the exact precise figure today. That is why I checked these within the last hour with our chief engineer. As a matter of fact, I went out there and helped him do it myself, and saw him do it myself. I didn't want to have any mistake about it.

Q. Continue.

A. Heated to 177 degrees Fahrenheit, and drains—the package drains in a heated chamber at the same temperature. The package is in that chamber a total of 23 seconds. As a matter of fact I clocked that myself within the last hour on the machine in commercial operation. The machine then cools the paraffin container in a cooling unit; it is automatically carried from the paraffin chamber to the cooling chamber, to 40 degrees temperature Fahrenheit.

Q. How long does that cooling process take?

A. I believe it is in there about three or four seconds, something like that; I am not quite sure, I haven't got that figure, but that is my best recollection.

Q. It remains in the cooling chamber from the time it leaves the bath until it goes to the filler?

A. It moves automatically; consequently, the period in the refrigeration chamber is approximately, I would
2416 say, seven seconds, on its way to the filler. The bottle is then automatically filled in the machine with an automatic measuring device.

Q. Is the paper container used for the purpose of measurement in any way?

A. The paper container, itself?

Q. Yes.

A. No, it is an automatic mechanical device. As a matter of fact, that automatic mechanical device has a maximum variation of two centimeters per quart, which is very close.

Q. After the milk is in the container, then what is done with it?

A. After the milk is in the container, it moves along automatically on a chain to the spot where the top is folded by machinery, at which point after folding a pre-heated sterilized wire staple is inserted.

Q. Does that operation on your machine result in the same sort of a seal at the top, and staple, as on Plaintiff's Exhibit 2?

A. Precisely the same.

Q. One edge of the carton is folded over the top, is it not?

A. That is correct.

2417 Q. Then what is done with the filled cartons?

A. It is at that point filled, the top is closed, sealed with the staple in it. It continues along to the little platform where it is taken by the operator and put into paper cartons, twelve per carton.

Q. And these cartons are sealed?

A. These cartons are sealed.

Q. With an adhesive strip?

A. They are sealed with an adhesive strip, so that they are completely sealed, the whole carton is sealed. They travel from there to the cold box on an automatic electric conveyor.

Q. Are the municipalities in which you sell milk and cream ones which regulate the inspection, sanitation and handling of liquid milk and cream through their health departments?

Mr. Schaefer: I object to the competency of that.

By Mr. Rall:

Q. You may answer, subject to the objection.

A. They certainly do. In our Philadelphia plant, alone, we are under at least fifty-five different distinct health officers and jurisdictions.

Q. Have the sales which you have made in these 2418 municipalities in the Pure-Pak container met with the approval and consent of the health authorities?

A. All of them?

Mr. Schaefer: I object to that.

The Witness: All of the fifty-five.

Mr. Schaefer: I object to the competency.

By Mr. Rall:

Q. Do you have photographic copies of certain permissions received from a few of the municipalities for the sale of your product in these containers?

A. Yes.

Q. Are you able to tell us whether or not those are true and correct copies?

A. Yes, I am.

Q. Photographic copies of the originals?

A. Yes, I am.

Q. Do you know where the originals now are?

A. We have them in our possession.

Q. Would you be willing at the time of the trial to send the originals to us if we will substitute copies for you?

A. If you insure their return to us, we will be glad to.

Mr. Rall: Will you mark these Paintiff's Exhibit 2419 5, and so on?

(Copy of letter from Herbert M. Packer to the Silver Seal Dairy Products Company dated November 27, 1936, was marked Plaintiff's Exhibit 5.

Copy of letter from Dennis J. Sullivan to Edward R. Fuller, President, Silver Seal Dairy Products Co., was marked Plaintiff's Exhibit 6.

Copy of letter to Mr. Fuller, President of the Silver Seal Dairy Products Co. from John C. Foote, Milk Inspector of the City of Wilmington, was marked Plaintiff's Exhibit 7.

Copy of letter from W. K. Moffett, Director of the Bureau of Milk Sanitation, Harrisburg, Pa., to Silver Seal Dairy Products Co., was marked Plaintiff's Exhibit 8.

Copy of letter was marked Plaintiff's Exhibit 9.

Copy of letter from George W. Grim, Milk Control Officer of Milk Control District Number 1, to Silver Seal Dairy, was marked Plaintiff's Exhibit 10.

Copy of letter from Huntington Williams, M. D., Commissioner of Health, Baltimore, to Edward R. Fuller, President, Maryland Seal Dairy Products Corp., was marked Plaintiff's Exhibit 11.)

2420 By Mr. Rall:

Q. I show you Plaintiff's Exhibit 5, purporting to be a letter from Herbert M. Packer to the Silver Seal Dairy Products Company dated November 27, 1936; is that the same company, or its predecessor?

A. It is the same company; the name was changed, that is all.

Q. From Silver to Sylvan?

A. From Silver Seal Dairy Products Company to Sylvan Seal Milk.

Q. But it is the same company?

A. It is the same company, no change otherwise whatsoever.

Q. At the time that letter was written did the City of Philadelphia have any form of permits for milk containers except simply by correspondence? In other words, what is the evidence that you have—

Mr. Schaefer: I object.

By Mr. Rall:

Q. —of the approval by the City of Philadelphia of the use of the Pure-Pak container?

A. My recollection is that we have a letter of approval by the City of Philadelphia for the use of that container.

Q. Is this the letter you are referring to? (Indicating.)

2421 A. This is the letter that I am referring to specifically for that purpose.

Q. And no other permit was granted at that time?

Mr. Schaefer: I object to leading, and to any further leading.

By Mr. Rall:

Q. Was there any other different permit issued than is stated in that letter?

A. Not to my knowledge.

Q. I show you Plaintiff's Exhibit 6, purporting to be a letter from Dennis J. Sullivan, Deputy Health Officer of Jersey City, New Jersey. State whether or not that is a

photographic copy of a letter bearing the signature of Mr. Sullivan.

A. Yes, it is.

Q. Did you receive any permit other than that letter to sell milk in these containers in Jersey City?

A. No, not to my knowledge.

Q. I show you Plaintiff's Exhibit 7, purporting to be a letter to Mr. Fuller, President of your company, from John C. Foote, Milk Inspector of the City of Wilmington, and ask you whether or not you received any permit other than that for the sale of milk in Wilmington in these containers?

2422 A. Not to my personal knowledge.

Q. You were an official of the company at the time this letter was received, were you?

A. I was.

Q. Did you see the letter at or about the date it bears?

A. I did.

Q. Are you acquainted with the signature of Mr. Foote?

A. I know Mr. Foote personally, and I recognize his signature.

Q. And that signature is a photograph of his signature, on Exhibit 7?

A. That is correct.

Q. Plaintiff's Exhibit 8 purports to be a letter from W. K. Moffett, Director of the Bureau of Milk Sanitation. When was the original of that letter received, if you know?

A. Of the Director of Sanitation of the Commonwealth of Pennsylvania at Harrisburg.

Q. When was that letter received?

A. December 1, 1936.

Q. It is dated that day; was it received at that time?

A. It was received within a day or two.

Q. Did your company receive any other permit for the sale of milk in the Pure-Pak containers in the

2423 State of Pennsylvania?

A. Not to my knowledge.

Mr. Rall: I am withdrawing Plaintiff's Exhibit 9.

By Mr. Rall:

Q. I show you Plaintiff's Exhibit 10, purporting to be a letter from George W. Grim, milk control officer of Milk Control District Number 1, dated December 2, 1936. Are you acquainted with Mr. Grim's signature?

A. Yes, and with Mr. Grim, personally.

Q. Will you tell us briefly for the record what Milk Control District Number 1 consists of?

A. Milk Control District Number 1 consists of the territory continuous to the Main Line of the Pennsylvania Railroad, running from Philadelphia directly west for about fifty miles, including all the towns contiguous to the railroad.

Q. Did you receive any permit from Milk Control District Number 1 other than that letter?

A. Not to my knowledge.

Q. I show you Plaintiff's Exhibit 11, purporting to be a photograph of a letter from Huntington Williams, M. D., Commissioner of Health, Baltimore, dated January 5, 1937; are you acquainted with Dr. Huntington Williams'

2424 signature?

A. I am acquainted with Dr. Williams' signature, and with Dr. Williams personally.

Q. Is that a photograph of a genuine signature?

A. It is.

Q. When was that received?

A. About January 5, 1937.

Q. The date it bears?

A. The date it bears.

Q. Did you receive any permit from the city of Baltimore approving the use of this Pure-Pak container other than that letter?

A. Not to my knowledge.

Mr. Rall: I deliver Exhibits 2, 3, 5, 6, 7, 10 and 11 to Defendants' counsel for use in cross-examination, and intend to produce the originals on the trial, and then by comparison show that they are the same.

By Mr. Rall:

Q. Have you had any complaints from your customers, or from any health authorities about the absorption by the Pure-Pak container of the milk or cream contained in it?

Mr. Schaefer: That is objected to one the ground

2425 that the testimony which would be adduced by complaints of health authorities cannot be adduced from this witness and be the best evidence.

By Mr. Rall:

Q. You may answer the question, subject to the objection.

A. No complaints of that character whatsoever since

we have been using the Pure-Pak container from either the health departments or the consumers.

Mr. Rall: You may cross-examine. I will offer these exhibits that have been marked, and that I have submitted to you.

Cross-Examination by Mr. Schaefer.

Q. In your experience, Mr. Carpenter, do all municipalities manifest official permission to distribute milk in the manner indicated in these exhibits?

A. Let me understand your question correctly. I don't quite get your question.

Mr. Schaefer: Will you read the question?

(The question was repeated by the Reporter as follows: "Q. In your experience, Mr. Carpenter, do all municipalities manifest official permission to distribute milk in the manner indicated in these exhibits?")

2426 A. I want to answer that exactly. Did you say—repeat that once more,

(The question was repeated by the Reporter.)

A. All of the principal municipalities do.

By Mr. Schaefer:

Q. That is, in your experience, they usually do it by a rather chatty letter addressed to an official of the dairy?

A. I would hardly consider that any of the letters that we received could be described as chatty.

Q. They ordinarily do it by sending you letters of this type?

A. They have the power to—

Q. Ordinarily?

A. They have the power to keep us—

Q. Will you just answer the question? Reread it.

(The question was repeated by the Reporter as follows: "Q. They ordinarily do it by sending you letters of this type?")

A. Yes.

By Mr. Schaefer:

Q. What is the name of the engineer who prepared the memorandum to which you referred in your direct examination?

2427 A. His name is R. T. Wetteland.

Mr. Schaefer: Will you mark this Defendants' Exhibit 1, please?

(A card was marked Defendants' Exhibit 1-A; a report

consisting of two pages was marked Defendants' Exhibit 1, and Defendants' Exhibit 1-B.)

The Witness: I only quoted from part of that.

By Mr. Schaefer:

Q. Now, I show you Defendants' Exhibit 1, 1-A, and 1-B. Are those the documents to which you referred on your direct examination?

A. What documents?

Q. Did you have any other document in your hand when you were testifying?

A. No.

Q. Then those are the documents to which you referred on your direct examination, aren't they? Are they or are they not?

A. As I recollect, I didn't refer to any documents. I referred to the specific mechanics of the course of a paper container through the Pure-Pak machine.

Q. Is that all you have to say?

A. Yes.

2428 Q. And that is what you testified was prepared by your engineer whose name you mentioned a minute ago?

A. That is right, in connection with my own observations of the machine.

Q. How did your engineer happen to write:

"Paper blank similar to Dean-Fieldcrest blank, Plaintiff's Exhibit 3, which I shall show you is placed on a tray of machine," and so on?

A. Because I have one of those blanks in the office, as we are in the habit of obtaining blanks of all—

Q. When did your engineer propose to show you that blank?

Mr. Rall: Are you talking about the typewritten part or the handwritten part?

Mr. Schaefer: I am talking about this paper.

Mr. Rall: He was referring to the pencil notation. I sent him that typewritten document.

Mr. Schaefer: Why didn't he say so?

Mr. Rall: You asked him what he was referring to in his direct examination. He said he was referring to some notes, which are pencil notes on this paper.

2429 The Witness: I didn't refer to that document at any time. There was no intention to refer to that as a document.

Mr. Schaefer: All right, that is all.

Redirect Examination by Mr. Rall.

Q. In whose handwriting is the pencil portion?
A. My engineer's.
Q. And the typewritten part was sent to you by whom?
A. By you.
Q. When?
A. This morning.
Q. By Western Union?
A. By Western Union.

Mr. Rall: I offer in evidence DEFENDANTS' EXHIBITS 1, 1-A and 1-B.

(The signature of the witness was waived.)

Reported by
Lewis A. Bicking.

2430 State of Pennsylvania } ss.
County of Philadelphia }

I, Lewis A. Bicking, a notary public within and for the State of Pennsylvania, do hereby certify that the foregoing depositions of Herbert M. Packer, Elkan H. Yunker, A. E. Carpenter, and Florence Johnston, were taken on behalf of the Plaintiff in the above entitled cause in pursuance of notice served on the Defendants on April 15, 1939, at the offices of Dechert, Smith and Clark, Esqs., 1320 Packard Building, Philadelphia, Pa., that said witnesses were by me duly sworn to testify the whole truth, and being carefully examined, deposed and said as in the foregoing depositions set out.

I further certify that the plaintiff and the defendants were represented by counsel during the taking of said testimony, and that signatures to the depositions were waived, and the same has been retained by me for the purpose of sealing up and directing the same to the Clerk of the Court as required by law.

I further certify that I am not connected by blood or marriage with either of said parties, nor interested directly or indirectly in the matter in controversy.

2431 In Testimony Whereof, I have hereunto set my hand and affixed my seal of office at Philadelphia, Pennsylvania, this 16th day of May, 1939.

Lewis A. Bicking,
(Seal) *Notary Public.*

My Commission Expires Aug. 2, 1942.

2489 **PLAINTIFF'S EXHIBIT 4.**

4/27/39

Lewis A. Bicking.

Report
to
Dr. Herman N. Bundesen
by
Dr. Lloyd Arnold
on a
Single Package Fabricated Paraffined Paper Container for Fresh Fluid Pasteurized Milk.

December fourth, 1937

2490 Report
to
Dr. Herman N. Bundesen
President, Chicago Board of Health
on
Pure-Pak Cardboard Fabricated Single Service Container for Fresh Fluid Milk.
Prepared by
Dr. Lloyd Arnold

2491 INDEX.

Report of Observations with General Recommendations.
Literature Citations.
Dr. Sanborn's Report on Microbiological Flora of Pure-Pak Cardboard Stock Paper.
Quality of Paraffin Used for Coating Containers.
Adhesives Used in Pure-Pak Container.
Compression Tests for Stability of Container.
Durability of Container Filled with Milk.
Dr. Prucha's paper on "Certain Sanitary Aspects of the Use of Paper Milk Containers."
Professor Bartlett's Article on "Increasing the Efficiency of Milk Distribution."
Sideview Photograph of Pure-Pak Installation. (complete and in operation.)

2492 **Report to Dr. Herman N. Bundesen, President**
Chicago Board of Health
on
Pure-Pak Cardboard Fabricated Single Service Container for Fresh Fluid Milk.
Prepared by Dr. Lloyd Arnold.

Cardboard of a satisfactory sanitary quality can be obtained and used for this purpose. The Breed-Sanborn group have not yet established standards for microbic content of cardboard used for paper containers for milk. At the July 12, 1937 Geneva conference a tentative standard of 500 bacteria per gram of paper container stock was suggested. At a conference I held with Doctors Breed and Sanborn in Geneva on November 15th they stated that their present "standard" would be less than half of the above. It seems that a standard will be developed to allow a certain number (50 to 100) common soil spore bearing types of bacteria per gram of paper stock, all vegetative forms of bacteria will be prohibited.

A report from Doctor Sanborn is enclosed. Previous analysis shows the cardboard used for Pure-Pak containers to have on an average of 35 bacteria per gram of paper stock. A report of an operation at this mill run on November 17th last, shows an average of 28 bacteria per gram, with two samples of eleven samples sterile.

This paper stock is shipped in closed packages protected from contamination to the Chicago Carton Company, 4200 South Crawford Avenue, Chicago, for conversion into containers. These containers are cut, printed and glued,
2493 shipped to the dairy as flat blanks enclosed in tightly wrapped packages to protect them from contamination. The Chicago Carton Company maintains a sanitary plant and exercises extreme care in converting the stock to blank containers.

These blanks are fed automatically into the Pure-Pak machine. The paraffin used is U. S. Pharmocopiae X standard quality (See Detroit Testing Laboratory Report of May 8, 1936 attached). The paraffin is maintained at the high temperature possible to prevent oxidation (175—185° F.), higher temperatures are impractical because of decomposition of paraffin.

The formed and paraffin container is automatically cooled

and filled with milk and sealed on a continuous belt line system.

The sealing is very effective. Compression tests made by the University of Detroit (November 26, 1937) Engineering Laboratory are attached, including empty and filled sealed containers.

The durability of the container filled with milk and kept at 100° F. is covered by an attached report (Huffman, December 4, 1936).

Copies of the report made by Dr. Prucha on "Certain Sanitary Aspects of the Use of Paper Milk Containers" presented before the Dairy Manufacturers Short Course (November 17-20, 1937) at Urbana are enclosed for your information. A careful study was reported at the same meeting by Dr. Bartlett on "Increasing the Efficiency of Milk Distribution". A copy of this paper is also attached. Both papers have a bearing on the use of single package containers for fresh, fluid milk.

2494 I spent Friday afternoon, November 26th, with Dr. Henry Vaughn, Mr. Palmer and Dr. Meader of the Detroit Board of Health. The Risdon Dairies in Detroit started last March using the Pure-Pak container. Rinse tests and holding quality of milk was done by Mr. Palmer and proved to be satisfactory. The daily unit packages has increased from 8,000 a day last March to 40,000 a day at the present time. The product meets all requirements of the Detroit Board of Health. Dr. Vaughn and Mr. Palmer consider this package satisfactory, safe and hygienic.

I observed one day's record of the dairy in Detroit in which 42,000 containers were filled, there were 92 defective packages of this number. Upon superficial inquiry I was unable to find any complaints as to "leakers" and other defective packages in the wholesale and retail handling of this product.

From my personal investigations and observations I see many advantages to the single service paraffin coated milk containers for fresh-fluid milk. I have attached the evidence I have been able to collect to substantiate this opinion.

Lloyd Arnold.

2495 References to Literature.

Sanborn, J. R.: Microbiological Control in the Manufacture of Paper Wraps and Containers for Food.

Industrial and Engineering Chemistry, 29:949-951 (1937).

Sanborn, J. R.: Development and Control of Microorganisms in a Pulp and Paper Mill System.

Jour. Bact., 26:373-378 (1933).

2496 Sanborn, J. R.: Paper Mill Sanitation in Relation to the Manufacture of Food Wraps and Containers.

Reported at 33rd Semi-Annual Meeting, Geneva, New York, June 5, 1937.

Abst., Jour. of Bact., 34:347 (1937).

The making of paper containers for such a perishable and easily contaminated product as milk gives paper manufacture increased public health significance. Certain types of container board are heavily contaminated with coliform organisms; in other cases spore-bearing bacteria, miscococci, or filamentous fungi may predominate.

Uncontrolled development of microorganisms in pulp and paper mills presents serious obstacles to quality in paper wrappers and containers. Accumulation of growth as stringy or gummy masses interfere with production and result in spotting and in lack of uniformity and strength. Discoloration and decomposition processes in stored pulp or stock definitely affect quality, as well as the presence of objectionable odors, which are sometimes transferred from pulp to finished paper.

Strict microbiological control of pulp and paper operations is successful in preventing such difficulties and also sets a sanitary standard for plants engaged in fabrication and handling of food wraps and containers. Programs for control include general sanitary practices, systematic slime prevention measures, chemical treatment of process water designed to reduce bacterial numbers in pulp, and handling of sheets so as to render them suitable for direct contact with such foods as milk and meat. Wraper and container board for foods should, upon leaving a mill, conform to sanitary and bacteriological standards.

2497 Conference on Sanitation of
Paper Milk Containers
New York Agricultural Experiment Station
Geneva, New York, July 12, 1937

Reported By
Dr. Robert S. Breed, Chairman
Geneva, New York

Reprinted from
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703 Anacapa Street, Santa Barbara, California

2498 Conference on Sanitation of Paper Milk Containers

A conference called to discuss problems of sanitation involved in the manufacture and use of paper containers for milk and cream was held at the New York Agricultural Experiment Station, Geneva, New York, on July 12, 1937. The rapid development in the use of containers of this type for milk and cream has caused many public authorities to consider whether these containers are adequately protected against contamination during their manufacture and during the interval between the time when they are completely fabricated and their closure after having been filled with milk. Nearly all of these paper containers provide uncontaminated pouring lips so that this part of the problem is usually solved with reasonable satisfaction.

This sanitation problem is a particularly pressing one in New York State because of the rapid development in the use of such containers in New York City where the City Department of Health reports that approximately one-fourth of the individual containers used each day for the packaging of milk in that city are made of paper. These containers are largely being used in schools and in store trade where the single service feature makes a definite appeal to the consumer. One milk plant has been developed

where milk is packaged in paper containers only, 250,000 of these containers being used daily.

Not only the New York City Department of Health, but also the New York State Department of Health and Departments of Health in large cities where these containers are in use are considering revisions of their present milk codes as these have been made to cover the use of glass and metal containers only. New problems are raised by the use of single service, moisture-proof paper packages. The procedure tentatively approved by the American Public Health Association for determining the number of bacteria present in milk bottles was developed for use in rinsing glass containers. It is not well suited to the examination of paper containers inasmuch as these containers normally show fewer bacteria per cc of capacity than do glass bottles as washed in the average milk plant.

Mr. W. D. Tiedeman, Associate Referee for the Standard Methods of Milk Analysis Committee, has therefore recommended that containers yielding low counts be rinsed with 10 cc quantities of sterile rinse water and that the entire amount be divided among three petri plates of the ordinary size and type. The total number of colonies that develops on the three plates gives the count per container. Research carried out at the New York Experiment Station by Dr. J. R. Sanborn, has shown that the paper board out of which these containers are made normally gives counts less than 500 per gram of disintegrated stock. This has led to the suggestion that some bacteriological standard should be established for paper board used for making food containers. Methods whereby public health men can determine that the paper stock is made from clean virgin pulp are also being developed.

This situation led to the preparation of an outline of "Principles of Sanitation that Should Govern the Manufacture and Use of Paper Milk Containers." This outline was made the basis for discussion and criticism at the conference held at Geneva, New York. Representatives of the following manufacturers of paper milk containers were present: American Can Company, American Sealcone Company, Dixie Vortex Company, Mono-Service Company, Ex-Cell-O Corporation, Purity Paper Vessels Company, Reed Container Company, Safety Service Milk Bottle Corporation and the Sealright Co., Inc.; also, manufacturers of paper board used in making these containers, makers of

paper cups, secretaries of interested paper and pulp and container associations, milk dealers using paper containers; and representatives from seven national, state and municipal health groups. Brief impromptu reports on investigations completed or in progress were made by Dr. F. W. Tanner of Urbana, Mr. W. D. Tiedeman of Albany, and Prof. John W. Rice of Bucknell University. Those present entered freely into the discussion of sanitation problems and as a result several improvements were made in the outline as given below.

It was pointed out that this outline was not drawn up in a form that would be satisfactory for use as a municipal ordinance, and it was suggested that the Baltimore City ordinance (Milk Sanitarian, Vol. 6, May 1937, p. 22) deserved study in this connection as it had been drawn up after a careful consideration of the problems involved. This ordinance forbids the use of completely prefabricated containers as it requires the paraffining of the containers in the milk plant. It was reported by Dr. Sanborn that a comparative study of finished containers had shown that some of the prefabricated containers were in a more satisfactory bacteriological condition when examined just as they were to be filled with milk than freshly paraffined containers. From other reports it also became evident that this ordinance places too great reliance on paraffining just before the container is filled as a sterilization procedure. From the time the paper board is made until it is paraffined, it should be handled in as cleanly a manner as possible, even aseptically where this is feasible.

The Baltimore ordinance does not mention the hot melt or thermoplastic types of adhesives which are considered to be even more desirable than the type of adhesive specified as they do not require the use of a chemical preservative to prevent fermentation. It was generally felt that ordinary animal glues ought not to be permitted under any condition. The statement regarding white spruce pulp was criticized by practical paper men as being too specific. So-called white spruce pulp in eastern U. S. A. normally includes some hemlock, balsam and other coniferous woods, while the newer southern yellow pine pulps are also being used to good advantage in making board for food containers. Anything that would tend to make the paper pulp industry independent of imported pulps would seem to be desirable from the public health standpoints as it would

tend to prevent the sudden use of substitutes in case war or other changes should cause interruption of normal channels of trade.

In order to develop further discussion of the sanitation problems involved, the revised statement of principles of sanitation is submitted for publication. These principles are drawn up on the assumption that the use of paper milk containers of both the prefabricated type and the type which is fabricated in the milk plant are to be permitted. It is believed that as manufacturers continue to make progress in methods of manufacture and handling, it will soon be possible to adopt more stringent standards. The paper milk container seems at last to be with us to stay and this seemed to be the judgment not only of the manufacturers, but also of the public health men present at the Geneva conference.

Paper Containers for Milk.

Principles of Sanitation to be Observed in Their Manufacture and Use.*

Item I.

Paper Container Stock.

Containers shall be made from virgin chemical or mechanical pulp. Virgin pulp is pulp that has not previously been used for commercial purposes. Board prior to moisture-proofing shall not at any time have a count exceeding 500 colonies per gram of disintegrated board.**

Unless used immediately after manufacture, container board shall be wrapped, sealed and protected until used. When used, the outside sheet on rolls or the top and bottom sheets of sheeted stock shall be discarded in all cases.

Public Health Reasons.

(a) The use of stock which has previously been used for commercial purposes (secondary stock) is not consistent with standards of food quality. Even if sec-

* As revised at a Conference held at Geneva, N. Y., July 12, 1937. Originally prepared by J. R. Sanborn, M. W. Yale and R. S. Breed.

** Standard given is suggestive only. Before adoption further research and standardization of methods for determining the bacterial count are necessary.

ondary pulp is completely sterilized during recovery, its miscellaneous content of foreign matter
2499 and dirt render it unsuitable for use in milk container stock.

(b) Contamination of rolls of paper, or sheeted stock occurs most readily at ends or the top or bottom sheets, hence the advisability of complete wrapping protection and sealing of these rolls or packs. Discarding the outside sheets of rolls or top and bottom sheets of sheeted stock, is a desirable precaution.

Satisfactory Compliance: For the above reasons, this item shall be deemed to have been satisfied when:

(a) Mills produce container board from virgin pulps.

(b) Mills require personal cleanliness among operators and consistently practice plant sanitation for the purpose of producing board low in dirt count and free from slime spots.

(c) Rolls or sheeted stock are wrapped immediately after manufacture in strong, clean wrappers, or utilized before there is opportunity for contamination from dust, dirt, or handling.

Item 2.

Process of Conversion—Where Stock Is Made Directly Into Containers

When container board reaches conversion plant, it shall be considered that this paper has received a bactericidal treatment. All stock and containers shall be handled mechanically so far as possible. Following fabrication, until final sealing in milk plant, container surfaces with which milk or milk products come in contact shall be protected from contamination. This shall be done through the use of mechanical equipment, careful handling, sealed sanitary shipping cases, or a closure for each container.

Public Health Reasons: Human handling of container board increases opportunity for contamination which is reflected in the numbers and types of microorganisms present in waxed containers. If stock in conversion and milk plants is not protected from contamination, the value of germicidal treatment and sanitary precautions at pulp and paper mills will be partly or entirely nullified. Moisture-proof treatment may not completely sterilize containers.

The chief purpose of the latter treatment is to render containers uniformly non-absorbent. Fortunately the same process may act as a secondary line of defense against contamination with microorganisms.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Paper direct from pulp and paper mill is unwrapped in conversion plant close to mechanically-fed machine and sheets exposed to unavoidable manual contact are discarded.

(b) Entire conversion process, methods of packing and shipping are conducted in such manner as to protect container from contamination, particularly human contact contamination.

Item 3.

Process of Conversion Where Container Is Preformed in a Collapsed or Nested State Before Final Sealing: Throughout the processes of printing, folding, sealing, adhesive application, or packing prior to shipment to milk plant, all stock and containers shall, as far as feasible, be handled mechanically and be suitably wrapped or packaged before shipping.

Packaged container stock at milk plant shall be kept in a clean, dry place and opened only for immediate use. Where it is necessary to form or manipulate containers, all surfaces with which milk or milk products may come in contact, shall be protected from human handling.

Public Health Reasons: It is important that, during intermediate stages in conversion processes, manual contacts with container board be reduced to a minimum. In order to guard against promiscuous handling and exposure to dirt, it is advisable to keep board not in actual use, packaged and sealed. Fabrication, printing and sealing of containers should be conducted in such manner as to protect them from contamination.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Plants for printing, folding, sealing, and packing containers or other operations prior to delivery to milk plants, handle container board mechanically so far as possible and, at the conclusion of the operations, package the stock in suitable wrappers, cartons, or tubes.

(b) Milk plants protect packaged containers and contents from injury or abuse and complete fabrication, filling, and sealing of containers in such manner as to protect them from contamination.

Item 4.

Moisture-Proofing: Moisture-proofing of containers shall be accomplished by means of fully refined paraffin wax or other suitable materials which are odorless, tasteless and non-toxic. The operation of paraffining machines shall be supervised by competent mechanics.

Public Health Reasons: Fully refined paraffin is the only grade acceptable to and consistent with food uses. It is of fundamental importance that containers be rendered completely non-absorbent by machines that operate properly and that the moisture-proofing material be odorless, tasteless and non-poisonous.

Satisfactory Compliance: This item shall be deemed to have been satisfied if the purpose and quality of the treatments described above are strictly maintained.

Item 5.

Adhesives: The gluing or sealing of container board shall be accomplished by means of non-fermentable adhesives, including synthetic, thermoplastic varieties, or such types having cereal or casein bases as produce rapidly-drying films which resist decomposition, dissolution, and leaching. Adhesives must not contaminate containers with microorganisms.

Public Health Reasons: Adhesives are as a class notoriously susceptible to decomposition by microorganisms. Some of these highly perishable materials, such as animal glue, are obviously not suitable for use in food containers. A number of adhesives, represented by products employing cereal or casein bases, while ordinarily fermentable, may be produced in forms or grades which are non-odorous, resistant to moisture, and unsuitable for the development of microorganisms.

Satisfactory Compliance: In accord with the above account, this item shall be deemed to have been satisfied if:

(a) Rapidly drying adhesives having cereal or casein bases which resist fermentation are used to form liquid-

tight joints; these adhesives do not contaminate containers with microorganisms.

(b) Adhesives employed be of hot melt or thermoplastic types.

Item 6.

Germicides: Germicidal and bacteriostatic agents that are toxic to human beings or that affect milk in any way, as in taste, odor or nutritional qualities shall not be used in board, adhesives, or moisture-proofing materials for milk containers.

Public Health Reasons: Substances introduced into materials of which containers are composed, which might conceivably exert preservative or antiseptic effects may affect the nutritional value of milk and be instrumental in producing off-flavors or odors. In some cases injurious effects on human beings from the use of such antiseptics have been demonstrated. It is necessary that substances of this class for use with containers be free of any toxic associations.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) No germicidal or bacteriostatic agents are used unless they have been shown to be non-toxic and without effect on milk through the use of physical, chemical and biological tests, supported by clinical evidence.

Item 7.

Handling of Paraffin: Paraffin in the solid state shall be shipped and stored in cool, clean, dry places, protected from dirt and isolated from odorous materials. Paraffin in the liquid state shall be kept, at all times, in clean and sanitary containers. Waxing machines and baths shall be cleaned at regular intervals unless cleaning devices such as continuous filtration, are employed. In no case shall freshly prepared, new paraffin be introduced into used paraffin which has become discolored, oxidized or dirty. Odorous substances such as ordinary kerosene and gasoline shall not be used on or about conversion machines.

Public Health Reasons: Paraffin absorbs odors and for the sake of milk quality it is advisable that special storage facilities be provided, which will also protect wax from promiscuous handling and exposure to dirt.

Due to the susceptibility of heated paraffin to oxidation, a well-regulated program of paraffin utilization should be followed to avoid over-heating, prevent contamination of new paraffin with partly oxidized wax and to eliminate the possibility of coating or impregnation of containers with discolored, dirty or oxidized wax.

Satisfactory Compliance: This item shall be deemed to have been satisfied if:

2500 (a) Slabs of paraffin are shipped and stored in clean, cool, dry places and removed from storage only as required for coating or impregnation bath.

(b) Paraffin for coating, impregnation or storage is held at temperatures and for period of time which will not impart flavors or odors to paraffin or milk.

(c) Molten paraffin is held in clean sanitary containers.

(d) Paraffin bath or tank is cleaned by continuous filtration or at regular intervals depending on such evidences of deterioration as discoloration and presence of dirt or fiber.

(e) The possibility of mixing new paraffin with a product that is unfit for use is avoided.

Item 8

Shipping Cases And Storage For Pre-made Containers: Cases for shipping empty containers shall be constructed of container board or wrapping designed to adequately protect containers from injury or abuse due to tearing or breaking. Containers shall be stored in sealed, dry, unbroken cases, in a dry place.

Public Health Reasons: Damage to shipping cases frequently exposes containers to conditions which may result in serious contamination from dirt, wetting and human contact.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Shipping cases are well enough constructed and sealed to resist the handling they receive in transit without injury.

(b) Containers are stored at all time in sealed cases in places having dry floors and where there is no washing down of the floors while cartons are in storage.

Item 9

Cartons For Shipping Filled Containers: Only clean cartons shall be used for shipping filled containers. Returned carriers shall be handled or stored so as not to become wet, dirty, or damaged before again being used.

Public Health Reasons: The re-use of shipping cartons may easily become a menace to milk quality and health. The abuse of these boxes arises from lack of care in handling and storing returned cartons. They may be carelessly thrown aside, allowed to become wet, dirty and mildewed. The packing of new containers of fresh milk in abused cartons is a practice which should not be allowed as it may cause addition of organisms and dirt.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) New paper cartons are used for single delivery to retailer.

(b) Milk plant has adequate and dry storage facilities for returned cartons and uses only neat and clean, uninjured boxes.

Item 10

Examination Of Containers: Bacterial plate counts shall be made in conformity with the latest standard methods recommended by the American Public Health Association.

Public Health Reasons: Consideration of possible sources of contamination during container manufacture, renders it advisable to reduce to a minimum the number of organisms present. While the likelihood of contamination by disease organisms is slight, bacteriological control of plant sanitation is necessary.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Quart containers develop not more than 1,000 colonies, pint containers develop not more than 500 colonies and half-pint containers develop not more than 250 colonies as determined by the Standard Methods of the American Public Health Association.*

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* Sanitary conditions in pulp and paper mills, container manufacturing plants and dairies usually enable paper containers to meet a standard of less than 100 colonies per container. Standards given are suggestive only. They are in accord with the standards suggested by the American Public Health Association for glass bottles. Standard Methods of Milk Analyses, 7th Ed., 1938.

Item 11

Quarantined Residences: The delivery of milk or milk products to and the collection of milk or milk-products containers from quarantined residences shall be subject to the special requirements of the health officer. It is recommended and urged that single service containers be used for retail delivery of milk and milk products under these circumstances. In case of wholesale delivery, to hospitals, etc., caring for infectious diseases carrier cartons as well as individual containers should be destroyed.

2501 I. Microbiologic flora in cardboard used for containers:

Sanborn letter of November 24, 1937.

Average of 35 viable spores per gram of finished cardboard.

2502 (Letterhead of New York State Agricultural Experiment Station Geneva, N. Y.)

November 24, 1937.

Mr. George D. Scott
The Ex-Cell-O Corporation
1200 Oakman Boulevard —Confidential—
Detroit, Michigan.

Dear Mr. Scott:

In accord with your request, we herewith submit the following progress report on certain aspects of our pulp and paper mill investigation.

The following table presents incomplete results from the two best mills out of eight that we have examined. It represents, therefore, only a very limited survey. These counts were obtained on standard agar at 32° for 3 days.

Bacteriological Studies of Container Board

Samples	Colonies Per Gram	Samples	Colonies Per Gram	Samples	Colonies Per Gram
Cherry River Ex-Cell-O Board				Cherry River Container Board C.	
Test 1	117	Test 6	67	Test 1	150
" 2	5	" 7	64	" 2	130
" 3	0	" 8	61	" 3	256
" 4	0	" 9	60	" 4	241
" 5	73	" 10	53	" 5	125
" 6	108	" 11	51	" 6	148
" 7	21	" 12	44	" 7	150
" 8	11	" 13	43	" 8	129
" 9	32	" 14	43	" 9	216
" 10	43	" 15	36	" 10	268
" 11	0	" 16	35	Mill I	
" 12	7	Cherry River Container Board B.		Milk Container Board D.	
" 13	77			Test 1	143
" 14	22	Test 1	97	" 2	112
	14/516/35	" 2	86		
Cherry River Milk Container Board A.		" 3	73		
		" 4	65		
		" 5	21		
Test 1	177	" 6	0		
" 2	129				
" 3	85				
" 4	84				
" 5	71				

2503

Test 3	109	Test 13	49
Test 4	100*	Test 14	44
Test 5	96	Test 15	43
Test 6	96	Test 16	42
Test 7	90	Test 17	36
Test 8	75	Test 18	32
Test 9	62	Test 19	26
Test 10	60*	Test 20	22
Test 11	54	Test 21	11
Test 12	54	Test 22	6*
*=Results from another laboratory		Test 23	0*

These results are representative of the counts obtained from board samples that were actually a part of the investigation. Our results, viewed as a whole, show wide variations, evidently due to inconsistencies in microbiological control. Seasonal variations in water supplies, temperatures, slime formation, local differences in mill practices and procedures undoubtedly account for lack of consistency in counts on disintegrated board. We hope that as a result of our investigations, pulp and paper mills will be able to achieve greater uniformity in the finished board. Our work with the Cherry River mill along these lines has just started. The results of the tests on samples collected at the mill on November 17th are as follows:

Sample	Colonies per cc. 32°/72 hours
Raw water	3,000
Chlorinated, filtered water	3
Vat 1—Sulfite pulp in filtered water	8,680
Vat 2—not in use	—
Vat 3—Sulfite pulp in filtered water	7,688
Vat 4—Sulfite pulp in filtered water	8,122
Vat 5—Sulfite pulp in filtered water	8,590

While drier temperatures reduce the vat counts to figures such as those below for finished board, it is possible to make considerable reductions in vat counts, resulting in more uniformly low count boards. We are working with Cherry River toward this objective. The following results which were also reported above, are the findings obtained from samples of board taken at the mill on November 17th. Results of tests on two samples are incomplete.

Samples	Colonies Per Gram	Samples	Colonies Per Gram
A Test 1	0	E Test 1	0
Test 2	73	Test 2	7
B Test 1	108	F Test 1	77
		Test 2	22
C Test 1	21	G	Not complete
Test 2	11		
D Test 1	32	H	Not complete
Test 2	43		

2504

We trust that this preliminary report will be helpful to Dr. Arnold. It will be possible later to present a much more complete account.

With best regards, I am

Very truly yours
J. R. Sanborn
J. R. Sanborn

2505 II. Paraffin used for coating containers:

Sample #3 Detroit Testing Laboratory, May 8, 1936 analysis.

U. S. Pharmacopoeia X standard.

130 432

THE DETROIT TESTING LABORATORY

Detroit, Michigan

Number 1704-A-7

Sample from Ex-Cell-O Aircraft & Tool Corporation Date 8-8-36.

Sample of 3 Paraffine Customer's Order 06-4235

Remarks Submitted by Client D. T. L. Order 80657

ANALYSIS:

7

	Sample #1	Sample #2	Sample #3
Odor Test (up to 225°F.) -	Very faint Kerosene like odor.	Very faint Kerosene like odor.	No oder
Free Oil - - - - - - - - - (1,000 lbs. per sq.in.)	None	None	None
Rancidity - - - - - - - -	None	None	None
Moisture (Benzol-Xylol) -	None	None	None
Acidity (U.S.P.) - - - - - (in terms of oleic acid)	.143%	.115%	None
(Calculated as milligrams of potassium hydroxide per gm. of wax)- - - - - -	.08	.02	None

REMARKS:

Sample #3 complies with the U. S. Pharmacopoeia X requirements for paraffine. Samples #1 and #2 are mixtures of various waxes. The U.S.T.M. test for oil (at 1,000 lbs. pressure) fails to yield any measurable quantity of oil from any of these samples.

THE DETROIT TESTING LABORATORY.

By C. E. Holland

2507 III. Adhesives used in Pure-Pak.

Dowicide A preservative added to starch. See:

Krengel letter to Dr. Breed, October 23, 1937.

Arabol Mfg. Company letter to Ex-Cell-O Corporation October 21, 1937.

Sodium Benzoate used to preserve starch. See Detroit Testing Laboratory Report, July 8, 1937.

National Adhesives Corp., letter to Krengel November 17, 1936.

United States Department of Agriculture. Bulletin Food Inspection Decision 104, covering sodium benzoate.

2508 October 23, 1937

Dr. Robert S. Breed
New York State Agricultural Experiment Station
Geneva, New York

Dear Dr. Breed:

Immediately upon learning from you of the Dowicide A preservative, we communicated with the Arabol Manufacturing Company and asked them to substitute it for their present preservative. We also mailed them a copy of the proposed standards as written up in Geneva. A copy of their reply is attached hereto. We were very pleased to learn that Dowicide A is already being used in our adhesives that are manufactured by them.

We would very much like to have a letter from you, confirming the conversation in New York in which you stated that Dowicide A, in your opinion, is a satisfactory preservative.

Our other adhesive supplier, the National Adhesives Corporation, is using benzoic acid for a preservative. A copy of a description of benzoic acid, from Merck's Manual of Materia Medica, Volume V, is enclosed herewith. You will note that the average dose of this drug is 8 gr. The Detroit Testing Laboratory (recommended to us by the U. S. Bureau of Standards) analyzed this glue for us and reported a total of 5% preservative in it, or 210 gr. per pound of glue. As one pound of our adhesive will glue approximately 1500 containers, the benzoic acid per container will amount to 14/100 of a grain. This is spread over fifteen square inches of paper, and, under the very worst conditions, only a minute fraction of this surface would ever be exposed to milk. We believe this information will be of interest to you.

We are still very anxious to have Dr. Sanborn with us, and hope he will give us a few days notice so that either Mr. Bixby or myself can arrange to be here to show him about.

Very truly yours,

R. E. Krengel,
Pure-Pak Division.

REKrengel:L

2509 F. I. D. 104 Issued March 3, 1909

UNITED STATES DEPARTMENT OF AGRICULTURE

Office of the Secretary

Board of Food and Drug Inspection

Food Inspection Decision 104

Amendment to Food Inspection Decisions No. 76 and No. 89, Relating to the Use in Foods of Benzoate of Soda

The Referee Board of Consulting Scientific Experts, composed of Dr. Ira Remsen, Dr. Russell H. Chittenden, Dr. John H. Long, Dr. Alonzo E. Taylor, and Dr. C. A. Herter, have reported upon the use of benzoate of soda in foods. The Board reports, as a result of three extensive and exhaustive investigations, that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health. The summary of the report of the Referee Board is published herewith.

It having been determined that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health, no objection will be raised under the Food and Drugs Act to the use in food of benzoate of soda, provided that each container or package of such food is plainly labeled to show the presence and amount of benzoate of soda.

Food Inspection Divisions 76 and 89 are amended accordingly.

George B. Cortelyou,
Secretary of the Treasury.
James Wilson,
Secretary of Agriculture.
Oscar S. Straus,
Secretary of Commerce and Labor.

The Influence of Sodium Benzoate on the Nutrition and Health of Man

Of the questions referred to this Board[1] the first to engage our attention have been the following:

(1) "Does a food to which there has been added benzoic acid, or any of its salts, contain any added poisonous or other added deleterious ingredient which may render the said food injurious to health? (a) In large quantities? (b) In small quantities?"

(2) "If benzoic acid or any of its salts be mixed or packed with a food, is the quality or strength of said food thereby reduced, lowered, or injuriously affected? (a) In large quantities? (b) In small quantities?"

To obtain satisfactory answers to these questions the Board has felt it necessary to carry through a careful investigation of the effect of benzoic acid or some one of its salts on the nutrition and general health of man. A thorough study of the literature giving the results of work done by various investigators on the physiological effects of benzoic acid and its salts, together with a study of reported clinical and medical observations; therapeutic usage, etc., have made it apparent that additional work was needed to render possible a conclusive answer to the above questions.

With a view to limiting the scope of the work, while at the same time meeting all practical requirements, our investigation, with the consent of the Secretary of Agriculture, has been confined to a study of the effect of the sodium salt of benzoic acid, viz, sodium benzoate.

To make this experimental inquiry as thorough as possible, and to minimize the personal equation, three independent investigations have been carried out—one at the medical school of Northwestern University, in Chicago, under the charge of Prof. John H. Long, of that institution; a second at the private laboratory of Prof. Christian A. Herter, of Columbia University, New York City; and the third at the Sheffield Scientific School of Yale University, in charge of Prof. Russell H. Chittenden.

The same general plan of procedure was followed in all three experiments. A certain number of healthy young

1. Dr. Alonzo E. Taylor, professor in the University of California, a member of this Board, owing to absence in Europe, has not been able to participate in the investigations embodied in this report.

men were selected as subjects, and during a period of 4 months these men, under definite conditions of diet, etc., with and without sodium benzoate, were subjected to thorough clinical and medical observation, while the daily food and the excretions were carefully analyzed and otherwise studied, and comparison made of the clinical, chemical, bacteriological, and other data collected. (For details, see the individual reports.) In this manner material has been brought together which makes possible conclusions regarding the effect of small and large doses of sodium benzoate upon the human system.

In fixing upon the amount of sodium benzoate that should constitute a "small dose", we have adopted 0.3 gram of the salt per day. Manufacturers of food products, which in their view require the use of a preservative, are in general content with 0.1 per cent of sodium benzoate. This would mean that in the eating of such a preserved food the consumer would need to take 300 grams per day, or nearly two-thirds of a pound of preserved food to ingest an amount of benzoate equal to our minimal daily dosage. Looked at from this point of view, our dosage of 0.3 gram per day seemed a fair amount for a "small dose", one that would clearly suffice to show any effect that small doses of the salt might exert, especially if continued for a considerable length of time. In all these four experiments this daily dosage was continued for a period of about 2 months. Under "large dose" was included quantities of sodium benzoate ranging from 0.6 gram to 4 grams per day. Such a daily dosage was continued for a period of 1 month. In a few instances somewhat larger doses were employed.

As the amount and character of the daily diet exert a well-known influence upon many of the metabolic or nutritive changes of the body, as well as upon the bacterial flora of the intestines, attention is called to the fact
2510 that the three investigations differed from each other in the amount of protein food consumed daily, thereby introducing a distinctive feature which tends to broaden the conditions under which the experiments were conducted.

The conclusions reached as a result of the individual investigations are given at length in the separate reports herewith presented, together with all of the data upon which these conclusions are based.

The fact should be emphasized that the results obtained

from the three separate investigations are in close agreement in all essential features.

The main general conclusions reached by the Referee Board are as follows:

First.—Sodium benzoate in small doses (under 0.5 gram per day) mixed with the food is without deleterious or poisonous action and is not injurious to health.

Second.—Sodium benzoate in large doses (up to 4 grams per day) mixed with the food has not been found to exert any deleterious effect on the general health, nor to act as a poison in the general acceptation of the term. In some directions there were slight modifications in certain physiological processes, the exact significance of which modifications is not known.

Third.—The admixture of sodium benzoate with food in small or large doses has not been found to injuriously affect or impair the quality or nutritive value of such food.

Ira Remsen,
Chairman,
Russell H. Chittenden,
John H. Long,
Christian A. Herter,
Referee Board of Consulting Scientific Experts.

2511 (Letterhead of The Arabol Manufacturing Co., New York City)

October 21, 1937.

Ex-Cell-O Corporation,
Detroit, Michigan.

Gentlemen:

Replying to your letter of October 21st re Pure-Pak Adhesive.

We thank you for the report on Paper Milk Containers which we have found very interesting.

In regard to the preservative for adhesives, we have used Dowicide A for some time in the Pure-Pak Adhesive which we supply from Chicago. We carry this number on stock at all times, and we could supply you with any amount of this you want on short notice.

In regard to the Pure-Pak Adhesive shipped from our New York Factory, we believe they use Dowicide A as a

preservative. However, to be sure, we are writing them today to obtain this information and will relay it on to you as soon as we hear from them.

Thanking you for calling this matter to our attention, we remain

Very truly yours,
The Arabol Mfg. Co.,
Per R. Bielen.

2512 (Letterhead of National Adhesives Corporation, Chicago, Ill.)

March 17, 1936.

Mr. Richard Krengel,
Ex-Cell-O Aircraft & Tool Co.,
Martin & Wilmette,
Detroit, Mich.

Dear Sir.

In accordance with the request of our Detroit representative, Mr. H. F. Tiffen, we are pleased to give you analysis of the Mikah Special Carton Adhesive, which we have been furnishing you:

Base is first quality pure food tapioca flour.
Contains 3% Sodium Nitrate.
Preservative is Benzoic Acid.

There are no other ingredients in this product, except, of course, water.

Trusting that this is the information you require, we are

Very respectfully yours,
National Adhesives Corporation,
M. E. Stern.
M. E. Stern.

MES:EC

2513 The Detroit Testing Laboratory
Detroit, Michigan

Number 3106-A-3

Date 7-8-37

Sample from Ex-Cell-O Aircraft & Tool Corporation
Sample of Paste Customer's Order
Remarks Submitted by Client D. T. L. Order 86267

Analysis.

Moisture	68.00%
Starch	29.69%
Sodium Nitrate	2.31%
Reaction faintly acid.	
Preservative	Sodium Benzoate—trace

The starch used is tapioca starch. The sodium nitrate as assayed is a little low. It is difficult, however, to obtain all of the sodium nitrate in a mixture of this kind as it can not be completely separated from the starch paste. It is probable, however, that at least 3% is present.

The Detroit Testing Laboratory,
By C. E. Greenlaw.

2514 IV. Compression tests made by the University of Detroit, November 26, 1937 shows the stability of the Pure-Pak container.

2515

University of Detroit
McNichols Road at Livernois
Detroit, Michigan

College of Engineering

Nov. 26, 1937.

The Excello Corporation,
1200 Oakman Blvd.,
Detroit, Michigan.

Dear Sirs:

I wish to report the following results of tests on milk containers supplied by your organization for compression tests on your order GA 16828, and our test order EM 106:

Detroit Sulphite containers:	Load at which container collapsed:
Quarts, on end, empty, Max. 200, Min. 150 Average	166 lbs.
Quarts, on end, filled, Max. 200, Min. 150 Average	166 lbs.
Quarts, on side, empty, top seam vertical	400 lbs.
Quarts, on side, empty, top seam horizontal	250 lbs.
Stevens and Thompson containers:	
Quarts, on end, empty, Max. 150, Min. 130—Average	137
Quarts, on end, filled, Max. 150, Min. 140—Average	145
Pints, on end, empty Max. 160, Min. 130—Average	142
Pints, on end, filled	100
Half pints, on end, empty	100
Quarts, on side, empty, top seam vertical	375

The above tests were carried out on our 100,000 lb. Olsen Testing Machine, and are accurate with five percent. Where average values are given, five tests were made. Where averages are not given results were the same for all specimens tested, in each case not less than five.

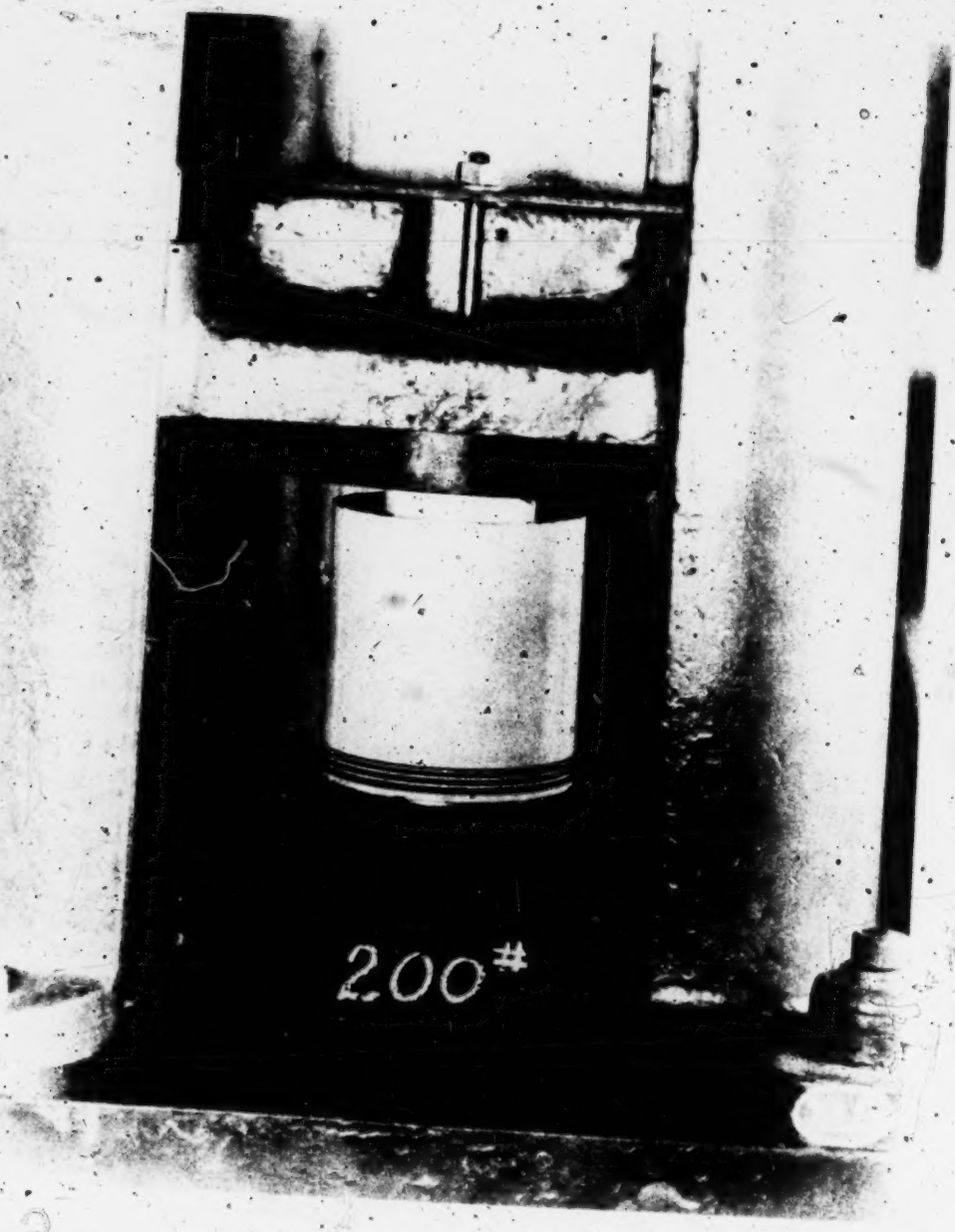
The Policy of the University Is: "No faculty member shall lend his name or prestige, or the name of the University, to any kind of advertising • • •".

If you desire to use this material in advertising, please consult the university authorities for permission to use the name of the university in your advertisements.

Yours very truly,

Herman E. Mayrose,
Herman E. Mayrose,
Prof. Eng. Mechanics.

XLO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2518 V. Durability of container filled with milk and kept at 100° F., report of Huffman, December 4, 1936.

2519 Durability Heat Tests—Pure-Pak Containers.

The object of this test was to determine if filled Pure-Pak containers when subjected to high temperatures for a given period would still be satisfactory receptacles for dairy products.

In dairy operation and distribution containers filled with dairy products are not permitted to reach a temperature over 50° F. Examination of filled containers held at this temperature in the dairy chill rooms and in the ice chests of the groceries proves that the Pure-Pak container remains in excellent condition for any practical period of time.

However, in order to leave no doubt as to the durability of the containers, quart packages filled with milk were placed in a specially constructed oven in which the temperature had been brought to and was controlled at 100° F.

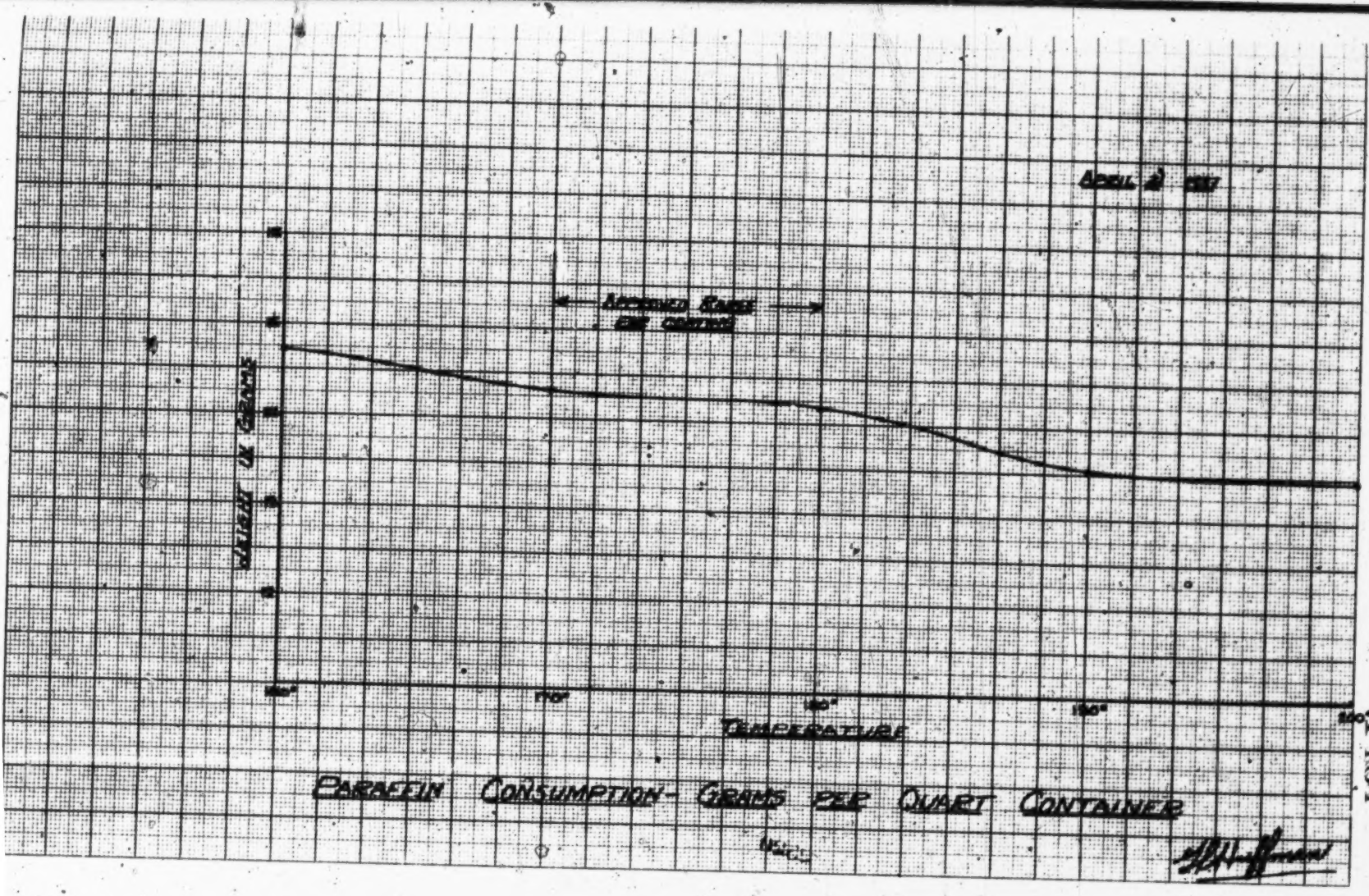
At the end of 12 hours the containers were examined very closely for leaks or penetration of the milk. They were found to be in excellent condition, although the milk was by that time rancid.

Inspections were made at 12-hour intervals for the next 60 hours and at the end of this time the containers were still in very good condition; although they were somewhat deformed from their original square shape, no leaks had developed at any of the glue seals and the contents were still intact.

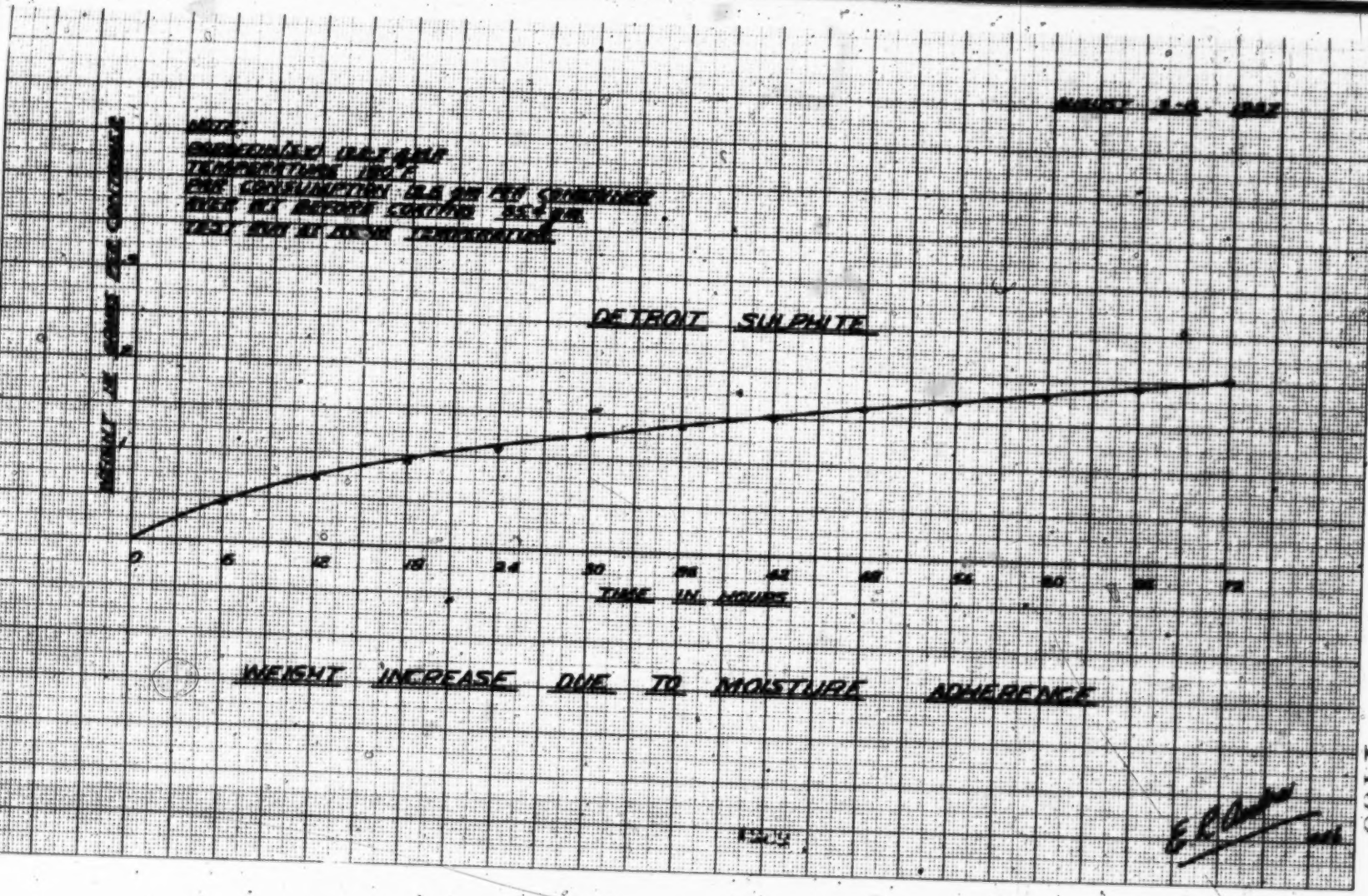
We feel that a test of this nature proves conclusively that for all practical purposes the Pure-Pak container has a wide margin of durability.

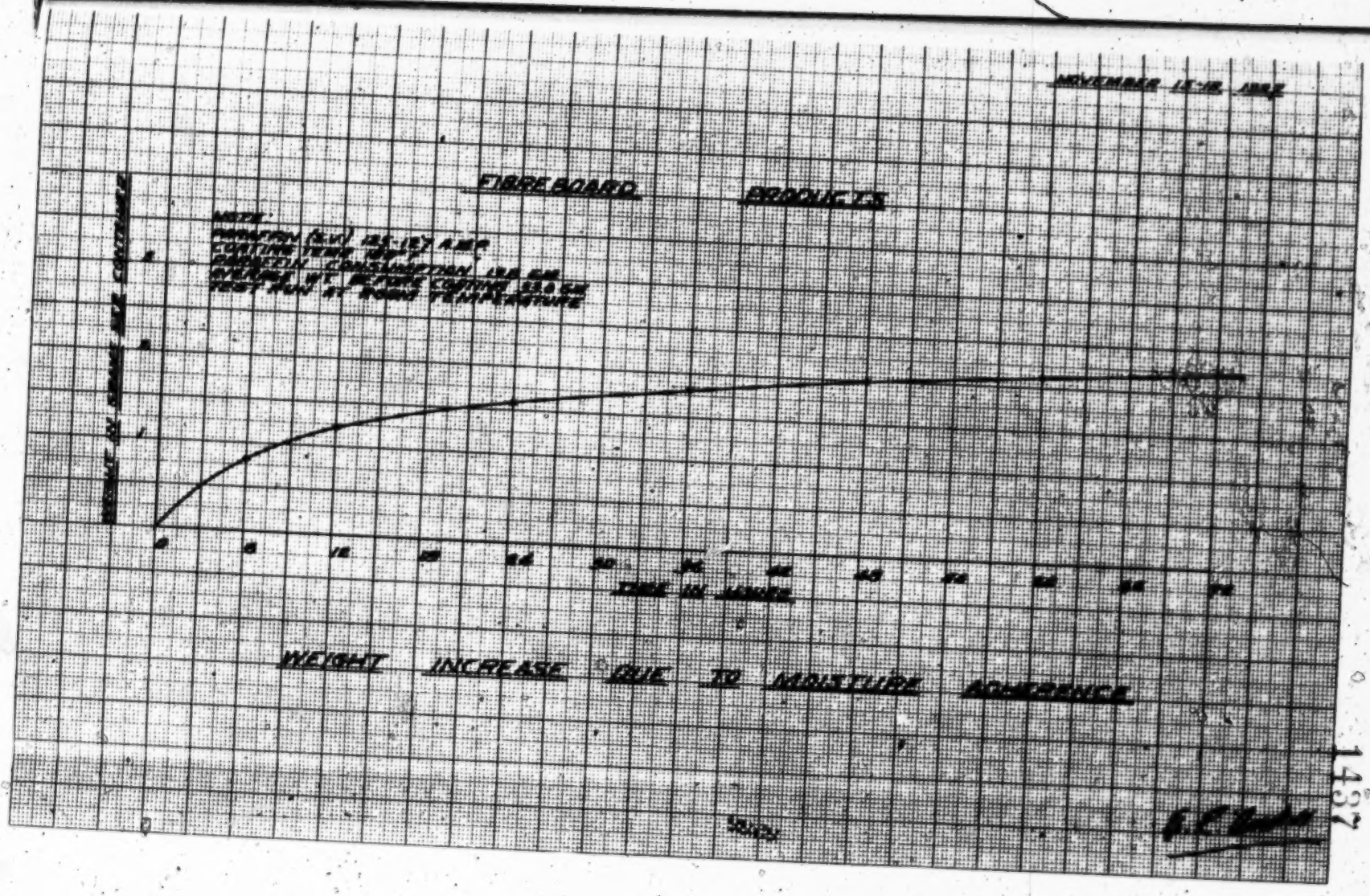
G. S. Hoffman,
Research Engineer Ex-Cell-O Corporation Pure-Pak Division.

Dec. 4, 1936.

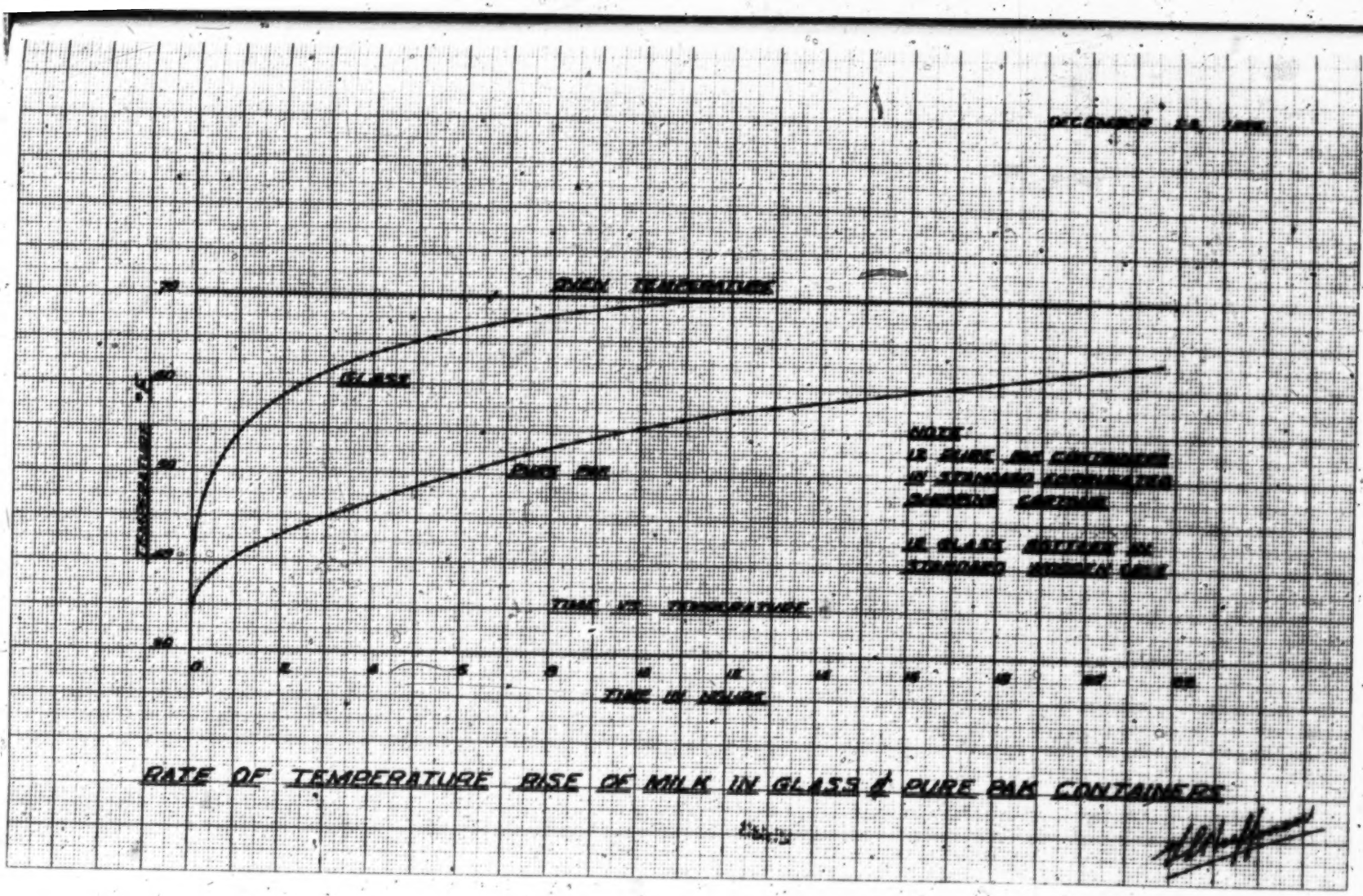


PARAFFIN CONSUMPTION - GRAMS PER QUART CONTAINER


DETROIT SULPHITE
TIME IN HOURS
0
6
12
18
24
30
36
42
48
54
60
66
72
WEIGHT INCREASE DUE TO MOISTURE ADHERENCE


NOVEMBER 17-18 1942
FIBRE BOARD PRODUCTS
NOTE:
CONDITION (a.w.) 23°-27° A.M.P.
CUTTING TIME 30 M.
CONDITION CONDITIONED 120 HR.
AVERAGE W.T. BEFORE CUTTING 23.0 GR.
TEST RUN AT ROOM TEMPERATURE
INCREASE IN WEIGHT IN GRAMS
TIME IN HOURS
WEIGHT INCREASE DUE TO MOISTURE ABSORBENCE
SHEET
B.C. Boulter

1437



RATE OF TEMPERATURE RISE OF MILK IN GLASS & PURE PAK CONTAINERS

1439.

2524 VI.

Certain Sanitary Aspects of the Use of Paper Milk Containers.

M. J. Prucha,
Department of Animal Husbandry,
University of Illinois,
Urbana.

2525 Certain Sanitary Aspects of the Use of Paper Milk Containers.

M. J. Prucha,
Department of Animal Husbandry,
University of Illinois,
Urbana, Illinois.

The bottling of fluid milk in paper containers is not a new idea. In a book by Kenelm Winslow entitled "Production and Handling of Clean Milk," published in 1909, the following statement appears on page 140. "The latest departure in the way of a milk bottle is the single service milk container of pulp wood invented and made by G. W. Maxwell of 1201 Falsom Street, San Francisco, California. It is now in actual use by dairymen in Los Angeles, California."

While the paper milk container was invented some thirty years ago, very little attention was paid to it by the fluid milk industry or by the milk sanitarians. It is only within the last few years that the paper milk container has forced its way into the fluid milk industry and to the attention of the milk sanitarians.

The paper milk container brings with it new problems, economic, practical, and sanitary.

As a result of demand for information concerning the paper milk container, a study on the subject was undertaken by the Dairy Department, University of Illinois. This paper is a progress report on some sanitary problems connected with the use of paper containers for fluid milk.

There are on the market, at present, at least five different types of paper milk containers. The study reported here was carried on specially with the Pure-Pak milk container. In the case of this container, the paper

(after it is made in the paper mill) is packed in large bundles and is shipped to the carton manufacturing company. Here the container is cut out, printed, and sealed along its long edge. It is packed and shipped to the dairy plant in a collapsed condition. In the milk plant the containers are fed into the Pure-Pake machine, made by the Ex-Cell-O Corporation of Detroit, Michigan. The container enters the machine at one end in its collapsed condition and comes out at the other end filled with milk and sealed. As it passes through the machine the container is first formed, then its bottom is sealed, then it is dipped in hot paraffine, passed through a cooling chamber, filled with milk, and finally it is sealed and dated.

What are some of the sanitary problems connected with the paper container? First, let us visit the paper mill. A paper mill requires a large volume of water so every paper mill is located by some abundant body of water—it may be lake, river or well. The paper from which the containers used in this study were made, came from the Detroit Sulphite Pulp and Paper Company. The pulp was made from red spruce trees by the Sulphite-
2526 lime process. As the tree logs enter the paper mill they are washed and cleaned of all bark. As they pass from the washing machine to the cutter they are sorted, as only sound and free-from-bark-and-knots logs are acceptable. Next the logs enter the cutter where they are cut up in $\frac{1}{8}$ inch log chips. The chips of wood are sorted as they pass on their way to the cooker. The cooker is a large steel cylinder lined with brick. Here the wood chips are cooked for about 20 hours in a sulphur-lime solution under steam pressure at a temperature of 250° F. or higher.

Bacteriological examination of the wood pulp as it came out of the digesting retorts, or cylinders, showed it to be sterile. This is to be expected because no microorganism could survive such cooking as is given the wood.

The next step in the handling of the pulp is the washing to remove all traces of the sulphur-lime solution. For this purpose copious amounts of water are necessary. While the water was filtered and chlorinated, it was not free from bacteria. The equipment also tends to contaminate the pulp so that by the time it is washed it contains a bacterial count varying from a few hundred to several thousand per ml. of the water and pulp mixture.

The washed pulp is then conveyed to the bleaching vats. Here it is mixed with a hypochlorite to give an initial active chlorine content of 10,000 parts of chlorine to a million parts of pulp and water mixture. After several hours of exposure, the pulp again becomes sterile. Next the pulp is washed to rid it of chlorine solution. Just before it enters the paper mill proper, the size composed of partially saponified rosin and paper makers' alum is added. The size as a rule is not sterile. It ranged in bacterial count from 200,000 to about 12 million per ml. The amount of size added in proportion to the volume of pulp and water mixture is so small that numerically the bacterial count of the pulp is increased but little. Also the residue of chlorine in the pulp following the bleaching appears to exert some germicidal influence on the bacteria in the pulp at this stage. In one examination the water used for diluting the pulp had a bacterial count of 1500 per ml., the count of the size was 2,000,000 per ml., but the mixture of pulp, size and water had a count of only 400 bacteria per ml. By the time the pulp reached the paper mill rollers, its count was only 40 bacteria per ml.

In the paper mill proper the pulp is picked up from the water suspension by revolving cylinders covered with fine mesh wire cloth. The layers of the pulp adhering to the cylinder become the paper. In order to drive the moisture from the layers of the pulp, it is passed over large steel revolving cylinders which are heated by steam at a pressure of about 15 pounds. By the time the layer of pulp passes over about 35 hot cylinders it becomes dry, the water being evaporated or rather boiled off, during the process.

Bacteriological examination of the finished paper was made as follows: Strips of paper four inches square were cut off as the paper was leaving the last hot cylinder. The paper strips were placed in 100 ml. of sterile water and after vigorous shaking, plates containing one ml. of the water were poured. In most cases the plates developed no colonies. The paper so made is practically sterile when it comes off the hot rollers.

2527 The paper destined for milk containers was cut automatically as it came off the steam rollers, packed in large bundles and was shipped to the carton company, in this case to the Chicago Carton Co. Here the containers

were designed, cut, printed, and sealed along the long edge. They were packed in large cartons and were shipped to the milk plant, where they were paraffined and filled with milk.

At this point the unparaffined containers were examined for bacteria. In one test twenty-quart size containers were torn up into large pieces and were jammed by disinfected hands into a three-gallon milk can containing six liters of sterile water. After soaking for twenty minutes and vigorous shaking, one ml. of the water was plated in each petri dish. Several of the plates had no colonies and the rest had only one or two colonies. Calculations from such counts gave 2.3 bacteria per square inch of the surface of the paper.

Another examination of the containers was made to determine how many bacteria were enmeshed in the body of the paper. One quart size container was broken up in pieces and placed in a glass butter churn in 1500 ml. of sterile water. The churn was agitated until the paper was reduced to pulp, which took about forty minutes. Ten plates were made in each test, each plate contained one ml. of the pulp suspension. The results from one test in which five containers were examined are given in Table 1. Calculations based on the counts obtained show that in container 1 the paper had 50 bacteria per grain. In container 5 the paper had 18 bacteria per grain. The results indicate that the number of bacteria enmeshed in paper made by the above-described process was too small to be accurately estimated by the available bacteriological methods.

The next step in this study was the bacteriological examination of the containers after they were paraffined. The containers were passed through the Pure-Pak machine where they were paraffined at 170° F., and the empty containers were sealed. The containers were selected for this study in the following manner: Each day during six weeks, the first six containers that passed through the machine before bottling of the milk and also the last six after the milk was bottled were taken for the examination.

Table 1.—Number of Bacteria Enmeshed in the Paper From Which Milk Containers Were Made.

Container number	No. of colonies on each of ten plates. One container in 1500 ml. water. One ml. in each plate										No. of bacteria per gram of paper
	Plate number										
	1	2	3	4	5	6	7	8	9	10	
1	1	3	2	3	0	1	1	2	1	0	50
2	1	2	0	0	2	1	2	0	0	0	28
3	1	0	0	0	2	1	0	1	1	1	25
4	1	2	0	1	0	0	1	2	4	0	39
5	0	0	1	0	1	0	0	1	2	0	18

2528 The method used was that recommended by the Standard Methods. The containers were opened in the laboratory, 100 ml. of sterile water added. After a thorough shaking, two plates—using one ml. of the water in each—were poured. The trypton glucose agar was used for plating.

Of the 266 containers examined; 52 gave no colonies on the duplicate plates; 65 gave one colony on one of the duplicate plates and no colony on the other plate; 48 gave one colony on each plate; 20 had two colonies on each plate and only one container had more than 10 colonies on the duplicate plates.

Two conclusions can be drawn from these results—first, the number of bacteria in these containers was extremely small; second, this method (adding 100 ml. of sterile water to the container and, after shaking, making duplicate plates containing 1 ml. of the water) is not sufficiently accurate for determining bacteria in the containers.

In subsequent examinations of the containers, the following method was used—about 25 to 30 ml. of the nutrient agar was poured directly into the container. After sufficient agitation to bring the agar in contact with all the inside surface, the containers were incubated. In order to count the bacterial colonies, the containers were cut open, the slab of agar was placed on the counting glass and the colonies were counted.

Using this method for determining the number of bacteria in the empty containers, the following results were obtained: One hundred and ten containers paraffined at 170° F. and plated within four hours after paraffining, developed

110 colonies, which is less than one colony per container; ninety-three containers paraffined at 180° F. developed 49 colonies; ninety-eight containers paraffined at 185° F. developed 29 colonies; and ninety-five containers paraffined at 190° F. developed 53 colonies. A large percentage of the containers developed no colony and the largest number of colonies found in any container was only five.

The conclusion drawn from the results of these examinations is that when the pulp is prepared by the sulphite process and is bleached and made directly into paper, the paper made from it is practically sterile; and after the containers are paraffined, they are practically sterile. It did not seem to make much difference whether they were paraffined at 170° F., 180° F. or 190° F.

The examination of paraffined containers was extended to other makes of containers. So far 1055 of these have been examined. Forty-five percent of these developed no colonies. The largest count obtained was 309 colonies. A point of interest in this examination was the observation that some of the containers appeared to have paper defects manifesting themselves in the form of brownish patches in the paper under the paraffine coating. The containers with these defects were apt to have high bacterial counts as shown in Table 2. The twelve containers in this table are those giving the twelve highest counts of the 1055 examined. Also, it is to be noted that nine of them had defects and all of them harbored spore-producing bacteria.

2529 Table 2.—Twelve Containers Among 1055 Examined Giving the Highest Bacterial Counts.

Number	Total count	Spreader	Defects in paper
1	309	+	+
2	150	+	—
3	126	+	—
4	118	+	+
5	111	+	+
6	110	+	+
7	99	+	+
8	67	+	+
9	64	+	+
10	63	+	—
11	54	+	+
12	49	+	+

+ Bacteria survived. — Bacteria killed.

In general, the examination of over two thousand paraffined paper milk containers showed that about 50 per cent of them developed no colonies. The remaining 50 per cent of the containers developed only a small number of colonies. From the numerical standpoint, the number of bacteria in them was far below the standards suggested for milk bottles.

Another phase of the study dealt with the paraffining of the containers. The paraffining of the containers is done primarily for the purpose of making the paper impervious to the milk. Since paraffining must be done at relatively high temperatures, the process also involves a bactericidal action.

This phase of the study has been conducted both in the milk plant and in the laboratory. In the milk plant the Pure-Pak machine was used for paraffining the containers. The machine is operated so that the containers are exposed to the hot paraffine and the hot air in the paraffine well for thirty seconds. The temperature of the paraffine can be set as desired.

To test the bactericidal property of the paraffining process, the containers were impregnated with a bacterial suspension of a given organism. For this study a variety of B. prodigiosus was used. In the first part of the study the containers were inoculated by being dipped in a bacterial suspension which had a plate count of 200,000,000 to 300,000,000 bacteria per ml.

In dipping the containers, they absorbed on the average about seven ml. of the suspension; thus there was deposited on each container approximately one and one half billion of the bacteria.

As soon as the containers were dry they were paraffined and sealed by the machine. To test for the presence of B. prodigiosus about 25 ml. of nutrient agar were poured in each container and after a thorough shaking, the containers with the agar were incubated at room temperature for at least four days.

2530 As already stated, the speed of the machine is adjusted so that each container was exposed to the hot air in the paraffine compartment and to the paraffine for 30 seconds. The two factors that could be varied were the temperature of the paraffine and the number of bacteria put on the surfaces of the container.

The following results were obtained when the containers were inoculated by dipping them in a bacterial suspension

containing large numbers of bacteria, say 200,000,000 to 400,000,000 per ml. Most of the containers after they were paraffined were free from bacteria, but there were a few—one to ten per cent—in which the bacteria survived. This was true when the temperatures were 170° F., 180° F., and even at 190° F. Once in a while a container would show the presence of bacteria.

When the bacterial suspension was such that there would be less than 2,000,000 bacteria per ml., the containers dipped in it and paraffined did not develop any B. prodigiosus colonies.

The method of inoculating the containers by dipping them in bacterial suspension was discontinued. Instead, the containers were inoculated by rubbing the inside surface of the containers with a hand dipped in a heavy bacterial suspension. This method deposited about 5,000 bacteria in each container. In one of the runs, using this method of inoculation, 300 containers were inoculated using a suspension of 250,000,000 bacteria. Another lot of 300 containers was inoculated using a suspension of 2,000,000 bacteria. One hundred of the heavily inoculated and one hundred of the lightly inoculated containers were paraffined at the following temperatures: 160° F., 170° F., and 180° F.

The 300 containers inoculated with the suspension containing only 2,000,000 bacteria per ml. and paraffined at 160° F., 170° F., and 180° F. were all negative.

When the containers were inoculated by rubbing with hands dipped in suspension that contained 250,000,000 bacteria per ml. there were nine positive out of 100 paraffined at 170° F., one was positive out of the 100 paraffined at 180° F., and two were positive out of the 100 paraffined at 190° F.

Still another method of inoculating the containers was tried. In regular dairy operations, the dairy plant operator, using his hands, takes the containers from the shipping carton and places them in a rack on the machine. This is the only place where the containers are handled by hand. To inoculate the containers the operator dipped his hands in a bacterial suspension before handling the containers. The bacterial suspension had about 300,000,000 bacteria per ml. The exact number of bacteria deposited on each container by such handling was not determined, but the containers were examined for the presence of bacteria.

In one test, six hundred containers were inoculated in this manner and were paraffined. Two hundred were

treated at each of the following temperatures: 170° F., 180° F., and 190° F. The examination showed all the containers paraffined at 170° and at 180° F. to be free from B. prodigiosus. Of the two hundred paraffined at 190° F., 199 were negative and one positive.

2531 In these tests in which inoculated containers were paraffined by the machine, a number of uninoculated containers were always passed through the machine before and after the inoculating containers. In no case were the uninoculated containers positive, indicating that the hot paraffine and the machine parts with which the uninoculated containers came in contact were free from B. prodigiosus.

The study of paraffining the paper was also carried on in the laboratory. Here small strips of paper, ½ by 2½ inches, were used. The strips of paper were dipped in a bacterial suspension and dried. They were then paraffined at different temperatures for varying lengths of time.

In Table 3 are presented results from one of the runs. Six strips of paper were treated for each combination of time and temperature. B. prodigiosus suspension of 200,000,000 bacteria per ml. was used in this test. The bacteria were killed in twenty seconds at 212° F.; in thirty seconds at 200° F. and 190° F.; in forty-five seconds at 180° F. and at 170° F. They were not killed in one minute at 160° F.

Table 3.—Killing of B. Prodigiosus by Paraffining One-Half Inch by Two and One-Half Inch Strips of Paper Inoculated with 1,000,000 Bacteria.

Temperature of paraffine	Seconds exposed				
	10	20	30	45	60
160° F.	+++ +++	+++ +++	+++ ++—	++— ——	+++ +—
170° F.	+++ +++	++— +++	++— ++—	—— ——	—— ——
180° F.	—++ +—	+++ +—	—— ——	—— ——	—— ——
190° F.	++— ——	—— —+	—— ——	—— ——	—— ——
200° F.	+— ——	—+ —+	—— ——	—— ——	—— ——
212° F.	++ ——	—— ——	—— ——	—— ——	—— ——

\+ Bacteria survived.
— Bacteria killed.

In Table 4 are given results obtained in one test in which the strips of paper inoculated with coliform organism were dipped in sterile hot water instead of in paraffine. It will be noticed that the hot water was very much more effective than paraffine in killing bacteria. This organism had approximately the same thermal death point as B. prodigiosus.

As the paper milk bottle travels from tree logs to a container filled with milk, there are several points in the journey at which sanitary control should be practiced. The goal in paper mills should be to produce sterile or nearly sterile paper. In the first place, the water used in the paper mill should be so treated that it is safe to drink. Such water should be low in bacterial counts, purified and chlorinated. When sulphite process pulp is used and is bleached, and when the water is as stated above, the paper will be practically free from bacteria.

2532 Table 4.—Killing B. Coli on Paper by Dipping Strips of Inoculated Paper in Hot Water. Each Strip Inoculated with 5,000,000 Bacteria.

Temperature of water	Seconds exposed				
	10	20	30	45	60
130° F.	+++ +++	+++ +++	+++ +++	+++ +++	+++ +++
140° F.	+++ +++	+++ +++	+++ +++	−++ −++	+++ —
145° F.	+++ +++	−++ +++	+++ —	— —	— —
150° F.	— —	— —	— —	— —	— —

+ Bacteria survived.
— Bacteria killed.

The next sanitary necessity is to prevent any contamination of the paper in packing, transporting, cutting into milk container shapes, transporting, storing, and handling at the milk plant.

To put in practice measures to protect the paper against contaminations, certain specific requirements will be necessary. Packing the material in a certain way, medical examination of those that must handle the paper and proper facility for storing the paper so that it will not be contaminated by dust, insects, vermin or contaminated human hands must be adopted.

Since this study was started a tentative sanitary requirement for paper milk containers has been proposed by a conference held in New York City in July, 1937. Although these proposed standards are good, they probably should be more exacting.

When the paper is so made that it is practically sterile, when it and the containers made from it are handled, packed, transported, and stored in such a manner that they will not become contaminated, and when the containers are paraffined at 185° F. for 30 seconds or longer, the paper containers will be fully as safe as any container can be made.

2533 Increasing the Efficiency of Milk Distribution

R. W. Bartlett

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For the United States as a whole two major conflicting forces in the milk business are now in operation: (1) a marked upward trend in milk distribution costs and an increased spread between the retail prices of market and evaporated milk, and (2) an increasing proportion of milk sold in stores and an increasing use of paper bottles. While canned milk competition is in the picture, the principal struggle is between retail delivery and store distribution of milk, with stores slowly but surely taking a part of the business of the older, established system of milk distribution.

The situation varies much in different sections of the United States. Starting in New York City, more than 20 years ago, store distribution of milk has shifted from "dipped milk" sales which were ruled out in June, 1933, to store sales of milk in paper containers. The City Department of Health reports that at present approximately 2,400,000 individual packages containing quarts or smaller quantities of milk or cream, are used daily in New York City, about 600,000 of which are single-service containers. During the past year, the price of Grade B milk on retail routes has been 13 cents a quart as compared with 9 or 10 cents a quart, the usual store price for milk. Including store sales in glass bottles, about one third of the milk

consumed by New York customers is purchased through stores.

The First National Stores have been selling milk through stores in Boston since 1921. Starting with a price differential below the retail delivered price of 4 or 4½ cents per quart, this has gradually been reduced to a differential of 1 cent a quart, fixed by the Massachusetts Milk Control Board.

With the beginning of the depression (1929-1934), competitive forces in California began to operate with such force that they utterly disorganized the retail distribution of milk in Los Angeles, San Francisco, Fresno, and several other Californian cities. The proportion of store sales in these cities increased at a remarkable rate as a result of low consumer incomes and low store prices. For distributors this trend has meant that the higher profits were to be found in wholesale distribution. Instead of being a depression situation of temporary nature, this change is likely to be permanent. As evidence of this trend, the Borden Company recently turned over all of its retail business in California to another company, and is now doing a 100 per cent wholesale business in that state. This policy, adopted by one of the most progressive concerns in the milk business, is an indication of the far-reaching significance of the present trend in the milk industry.

2534 Well established in New York and Boston on the eastern coast, and now deeply rooted in the western coast, the movement toward an increasing proportion of store sales of milk is gradually extending to the in-between cities. Detroit is now a battle-ground of conflicting forces with store sales of milk gaining substantially. Dairy stores, started in the twenties by the Isaly Dairy Company of Youngstown, Ohio, are now numerous in Pittsburgh, Pennsylvania. Recently the Borden Company opened up a chain of dairy stores in Columbus, Ohio. Since 1933, the Farmers' Equity Union have opened 21 dairy stores in and around Lima, Ohio.

What about the paper bottle? Starting in New York City in 1930, the paper bottle is now used in the wholesale distribution of milk in Philadelphia, Pittsburgh, Los Angeles, Cleveland, Detroit, and Baltimore (Table 1), as well as in many smaller cities. At present, its use in Los Angeles is limited principally to the hilly districts, and for sea-going vessels.

Table 1.—The Use of the Paper Bottle in the Distribution of Milk in Cities with More Than 500,000 Population, October, 1937[a].

City	Date first used
New York	1930
Philadelphia	1933
Pittsburgh	1933
Los Angeles	1933 (est.)
Cleveland	1935
Detroit	1937
Baltimore	1937

"What does increasing store distribution, increasing use of paper bottles, as well as increased competition of evaporated milk, mean to my business?" the forward-looking milk dealer may well ask. While no attempt will be made in this paper to answer completely this question, some facts will be reviewed and analyzed which, it is hoped, may be helpful in suggesting an answer.

Increasing Spread Between Retail Delivered Prices of Market Milk and Retail Store Prices of Evaporated Milk

Eighteen years ago, a housewife paid 1 cent more for a quart of milk delivered to her doorstep than for a can of evaporated milk purchased at the store[1] while in Octo-
ber, 1937, she paid 5.1 cents more than the average
2535 price of market milk in 51 cities was 12.7 cents per
quart, whereas a 14½-ounce can of evaporated milk cost 7.6 cents in these same cities.[1] The trend in the price spread between these two commodities from 1919 to 1937 is shown in Figure 1. One should particularly note the upward movement since 1933. In view of this increasing spread, it is not difficult to understand the present healthy condition of the evaporated milk industry. A question which naturally arises is: What caused this wide increase in spread?

[a] Cities in this population grouping which are not using paper bottles in the distribution of milk are: Boston (not used for milk, but used for cream), Buffalo, Chicago, Milwaukee, Minneapolis-St. Paul, St. Louis, and San Francisco.

1. In 1919, evaporated milk was distributed in 16-ounce cans. In this study prices were converted from the 16-ounce can to the 14½-ounce can by multiplying by .90625 for the period 1919 to December, 1931, when the 14½-ounce can was put into general use by the evaporated milk industry.

1. As reported by the U. S. Bureau of Labor Statistics.

Major Decrease in Costs of Processing and Distributing Evaporated Milk

Studies indicate that the major cause for this increase has been the marked decrease in costs of processing and distributing evaporated milk without a corresponding decrease in costs for distributing market milk.

In 1937, canned milk distributors received 4.6 cents per 14½-ounce can for processing and distributing evaporated milk, or only slightly less than half of the 8.7 cents per can received in 1921 (Figure 1). Loaded with stocks following the loss of their European outlet in 1920, canned milk manufacturers in 1922 lowered their handling margin 2 cents a can from the margin prevailing in 1921. Once started, they have continued their program of lowering costs, so that present margins have been reduced another 2 cents since 1922, and the results of this policy have increased sales. In contrast to the 1920-21 slump, when they were forced to cease operations, during the recent depression (1929-1933) condenseries have been kept running continuously and have emerged in a much stronger financial position than the market milk business.

Handling Margins for Market Milk Remain High

Since processing and retailing milk to consumers include a high proportion of inflexible costs, leaders in this industry have been unable to compete with the canned milk industry in reducing costs. Using the difference between the retail price per delivered quart and the average receiving station price paid producers in eight cities[2] as a rough measure of the trend of distribution costs in the larger cities, one finds that the present gross handling margin in these cities is fully as high as that in 1921 and nearly as high as in 1930, the peak year (Figure 1). It declined somewhat in 1932 and 1933, but during the past four years has been rising rapidly.

Market Milk Prices to Producers Slightly Higher Than Condensery Prices

Market milk prices paid to producers average somewhat higher than prices at the condensery. Reduced to a quart basis, however, this difference is relatively small. From 1919 to 1937, market milk prices paid producers at receiv-

ing stations tributary to eight large markets[2] have ranged from 0.6 to 1.3 cents per quart higher than the average price paid for condensery milk in the United States (Figure 1).

A review of the changes in these premiums indicates that they have been of only minor importance in increasing the margin between retail prices of market milk and canned milk.

2. The cities included are: New York, Boston, Detroit, Milwaukee, Chicago, Philadelphia, St. Louis, and Minneapolis-St. Paul.

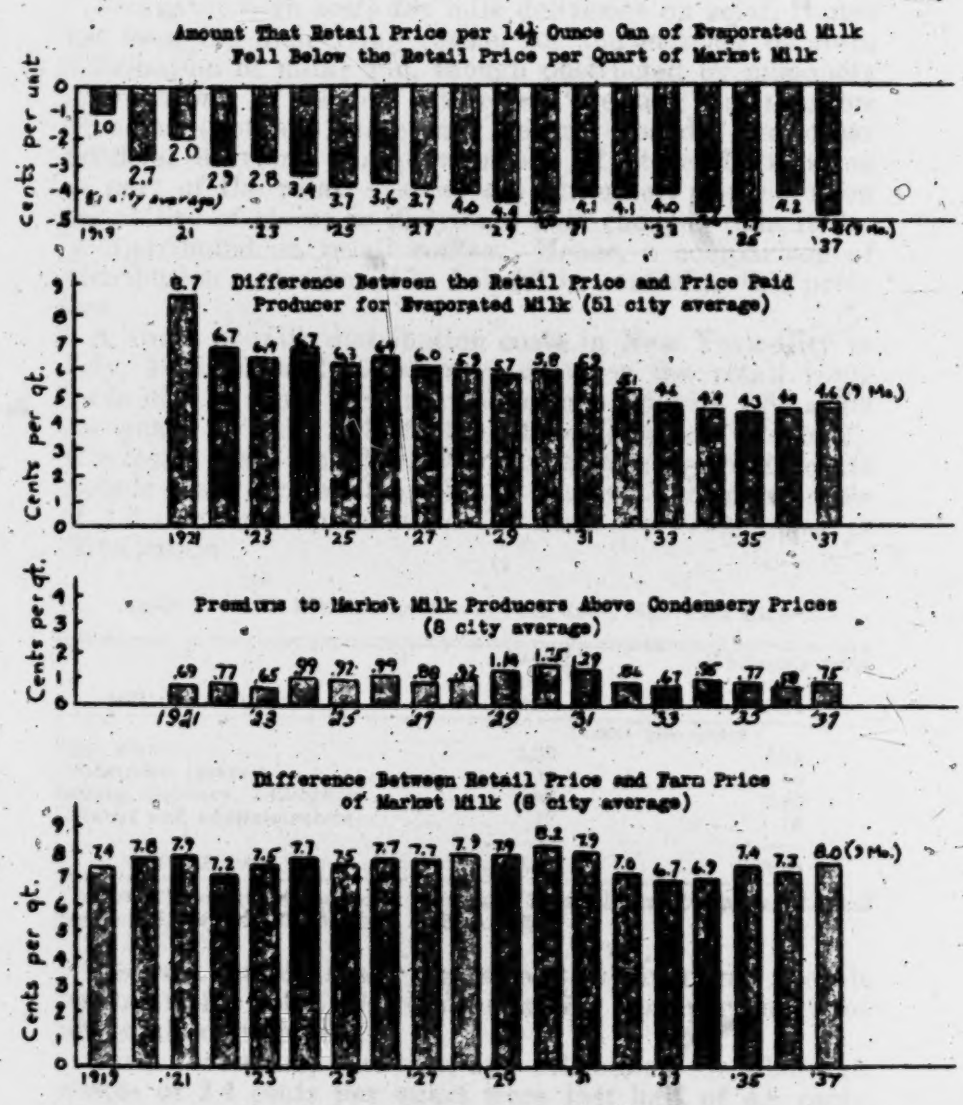

Fig. 1.- Some Measures of Differences in Prices, 1919-1937

2537 **Retail and Wholesale Distribution Costs**

Relatively high costs for milk deliveries on retail routes has been the underlying reason for the increase of store distribution of milk; and, though obstructed by monopoly combinations of various interests, "freezing" of margins by some (not all) state milk control boards, and other artificial barriers, the permanency of store distribution as part of the retail system will ultimately depend upon the ability of stores to distribute milk cheaper than it can be distributed on retail routes. Hence, a comparison of distribution costs should be helpful in analyzing this problem.

A study of milk distribution costs in New York City in July, 1935, showed an average cost for the retail route trade of 6.35 cents per quart, as compared with 3.85 cents per quart for milk sold to the wholesale trade (Table 2). Wholesale costs include delivery costs to stores but do not include costs for handling milk at stores. City plant costs of 1.2 cents per quart were the same for both types of distribution.

Table 2.—Milk Distribution Costs, July, 1935, New York City.[a]

Milk dealers costs	Retail route trade	Wholesale route trade to stores
	(cents per quart)	
City plant	1.20	1.20
Containers (glass)	.20	.10
Selling, delivery, collections	4.80	2.40
General and administrative	.15	.15
Total cost	6.35	3.85

[a] From "The Spread Between Farm and Retail Prices for Milk," Leland Spencer, American Cooperation, 1935, p. 495.

The cost for containers (glass bottles) averaged .2 cents per quart for retail distribution, and .1 cent per quart for wholesale distribution.

Costs for selling, delivery, and collections for wholesale routes of 2.4 cents per quart were just half of 4.8 cents, the unit cost for these same operations on the retail routes. General and administration costs of .15 cent per quart were the same for both types of delivery.

Costs for store distribution were not computed in this study. Although some people question their ability to

handle it on such a small margin, many stores in New York City are handling milk for 1 cent a quart at the present time.

Comparison of Milk Distribution Costs in Glass Bottles and in Paper Bottles

The use of the paper bottle in the store distribution of milk in New York City has expanded with amazing rapidity, particularly during the past two years. In marked contrast, the glass bottle is still the usual type of container for store distribution of milk in Boston. A study of wholesale distribution costs in these cities may help to explain the situation.

2538 As stated, milk distribution costs to the wholesale trade in New York City for July, 1935, averaged 3.85 cents per quart. These costs were based upon distribution of milk in glass containers.

Costs for distributing milk in paper bottles by the Dairy Sealed, Inc. of New York City, a subsidiary of the Borden Company, were filed at a hearing before the New York State Milk Control Board in May, 1936. Total costs of wholesale distribution for January to March, 1936, as shown by this record, averaged 3.24 cents per quart. This was about three-fifths of a cent a quart less than costs of distributing milk in glass bottles, as shown in the New York cost study made six months earlier (Table 3).

Table 3.—Milk Distribution Costs on Wholesale Routes in Glass Bottles and Paper Bottles, New York City.

Milk dealers costs	Wholesale routes	
	Glass bottles July, 1935[a]	Paper bottles[b] Jan.-Mar., 1936
	(cents per quart)	
City plant	1.20	.614
Containers	.10	1.347
Selling, delivery, collections	2.40	1.025
General and administrative	.15	.264[c]
Total cost	3.85	3.240

[a] Same source as Table 1.

[b] Data as presented at a hearing before the New York State Milk Control Board, May, 1936, by the Dairy Sealed, Inc., a subsidiary of the Borden Company.

[c] This includes the billing and collection expense amounting to .05 cents per quart.

Breaking down these figures, one observes that city plant costs for processing and bottling milk in paper bottles were about one half those for performing the same operations with glass bottles. Use of the single-service container eliminates all costs of labor, space, equipment, and power, necessary for handling, washing, and storing glass bottles.

Selling, delivery, and collection costs for paper bottles averaged about 1 cent per quart, as compared with 2.4 cents per quart for the same service with glass bottles. Probably the greatest saving in delivering paper bottles has resulted from speeding up the servicing of stores. With no returned bottles, and collections delegated to an afternoon service man, a route delivery-man now commonly services an average of ten stores an hour. The use of paper containers also reduces to one third the space required for glass bottles, and reduces the weight from an average of 61 pounds to 28 pounds per case of 12 quarts of milk In fact, with the use of dry ice in insulated trucks, it is now practical to service stores within a radius of at least 75 miles from the main plant. This eliminates high sub-station costs for labor, space, and equipment, as well as costs for icing milk at this station.

2539 The limiting factor in the use of paper bottles is the cost of the container. These studies show a cost of 1.347 cents per quart for the single-service container as compared with .1 cent per quart for the glass bottle. Undoubtedly the cost of this container has been reduced during the past two years as the number used has increased.

The fact that the distribution costs for store deliveries in New York were found to be cheaper with paper bottles than with glass bottles does not necessarily mean that this same condition holds true in other cities. In comparing wholesale costs of distribution in Boston with those for the Dairy Sealed, Inc., of New York, one finds that the New York costs of 3.24 cents per quart exceeded those at Boston, where wholesale distribution of milk in glass bottles averaged 3.09 cents per quart (Table 4).[1]

1. The accounting system used in computing distribution costs in New York City differed from that used in computing these same costs in Boston. While this might affect the distribution of costs between different items, it should not seriously affect total costs per unit.

Table 4.—Milk Distribution Costs on Wholesale Routes in Glass Bottles, Boston, and in Paper Bottles, New York.

Milk dealers costs	Boston[a] Glass bottles 1935	New York[b] Paper bottles July, 1935.
	(cents per quart)	
City plant	.85	.612
Containers	.12	1.347
Selling, delivery, collections	2.04	1.025
General and administrative	.08	.254
Total wholesale cost	3.09	3.24

[a] From Summary Report on Cost of Distributing Milk in the Boston Market, October, 1936 (pp. 21 and 22). Prepared for the Massachusetts Milk Control Board by the Charles F. Rittenhouse and Company, Certified Public Accountants.

[b] Same source as Table 1.

During the past two years costs of retail deliveries have increased, while apparently store costs of retail distribution in paper containers have declined. One dealer in New York City is reported to have reduced wholesale distribution costs to 2.8 cents per quart. This tendency toward reduction in wholesale costs of distribution when retail delivery costs are rising, is a powerful force for expanding the store distribution of milk.

Summary and Conclusions.

A review and analysis of the facts shown in this paper indicate that:

1. The evaporated milk industry has made remarkable strides during the past 16 years in lowering costs for distributing their product.

2540 2. The market milk industry in the larger cities apparently has failed to keep pace in its retail operations with the canned milk industry in lowering distribution costs. Today retail delivery costs fully as much as it did 15 to 20 years ago.

3. The proportion of store distribution of milk has been increasing in recent years as a result, at least in part, of distribution costs lower than those for retail deliveries. With this increase in store business, it is important to note that it has not displaced retail deliveries, nor is there any indication that either is about to crowd out the other. These two types of enterprise are in keen competition. At the

present time, each is more efficient because of the other's competition. And because of this competition consumers are getting the benefit of increased efficiency.

4. The introduction of paper bottles in the store distribution of milk is economically sound to the extent that it lowers distribution costs and is accepted by consumers. If the use of paper bottles continues to bring about lower costs for the store distribution of milk coincident with rising costs of retail deliveries, one may expect the use of the single-service container to continue to expand.

5. In view of the adequate plant capacity of milk distributors now in business, it is to be hoped that further shifts from retail deliveries to stores will be brought about largely by distributors now in the business rather than through the duplication of facilities by new enterprisers.

2541 The Practicability of the Paper Milk Container.

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Urbana, Illinois

For many years glass bottles have been the accepted container for milk. Although the life of a glass bottle is limited, its adaptability for washing and sterilizing, and its transparency (which increases the sales appeal of the contents) have enabled it to easily maintain a complete monopoly in the milk industry for the past 20-30 years.

With the recent development of store selling of milk there has come a demand for an inexpensive single service type of milk container. The store shopper naturally prefers to buy milk in a package that does not have to be returned, and one which can be conveniently and safely carried to the home. To meet this need several paper milk containers have been developed.

According to Winslow (The Production and Handling of Clean Milk, pp. 140-142, 1907-1909), the paper milk container was invented by G. W. Maxwell of San Francisco, and first used by dairymen in Los Angeles. These early containers resembled an ordinary drinking glass and were sterilized by dipping into paraffin at 220°F. A special machine was used for filling and capping. According to Winslow the advantages of the paper containers are freedom from germs, no breakage or loss of bottles, no bottle wash-

ing and sterilizing necessary, and reduced weight in transportation.

The first extensive commercial use of paper containers was probably in New York City in 1929. Since this time, however, the single service container has been introduced into several of the larger cities all over the country. There are in general three types of containers used, namely, those prefabricated and requiring a special filling machine, those prefabricated but not requiring a special machine for filling, it being possible to use the regular glass bottle filling machine, and, finally, those that are formed and paraffined in the dairy just before filling, requiring of course a special machine for the purpose.

While it is our intention to study all three types of containers from the standpoint of their sanitary qualities, adaptability for dairy plant operation, and acceptance by the consumer, the present report will deal, only with that type of container formed and paraffined immediately before filling. The container used for this purpose was the Pure-Pak. The machine necessary for preparing and filling the container was supplied by the Ex-Cell-O Corporation, Detroit, Michigan.

The machine, without the platform, covers a floor space of approximately 2½ feet by 24 feet, and weighs 5 tons. The printed containers are fed into one end of the machine where they are first formed and the bottoms glued
2542 down, after which they pass into the hot paraffin bath where they remain for 18 seconds. They then drain for 12 seconds longer before passing out of the hot paraffin compartment. The temperature of the paraffin and the air above may be varied but the minimum recommended by the manufacturers of the machine is 170°F. The container next passes through a cooling chamber where a blast of 40°F. air solidifies the paraffin and cools the container. The container is then filled with milk and any excess foam is removed by a blast of dry steam. The top is folded in, heated, and pressed along the edges so as to seal the closure. A hot (400°F.) wire staple is inserted to secure the seal, and finally the day of the week is stamped on. The containers of milk are then packed twelve to a case. The paper case of twelve bottles weighs approximately 28 pounds.

The amount of paraffin necessary for coating the containers varies from about 12 to 15 grams. As the temperature of dipping is raised the amount of paraffin retained

decreases. In our studies, two grades of paraffin were used—the high (135°-137°F.) and low (125°-127°F.) melting point paraffins. In actual tests the temperature at which the paraffin melted sufficiently to be detectable upon absorbent paper was about five degrees below the rated melting points, so that danger from paraffin melting and running into the milk would not be evident until the container temperature reached about 120°F. in the case of the low-melting point paraffin and 130°F. in the case of the high-melting point paraffin.

Since there is some bending of the paraffined paper during handling and opening, an attempt was made to determine to what extent the paraffin chipped off into the milk. The average weight of paraffin found in six bottles filled with water and hauled on a milk delivery truck for eight hours was .001 grams.

As previously stated, the foam that results from filling is removed by a small jet of steam. Foaming is more of a problem in the case of homogenized milk than regular milk. The amount of foam formed is directly related to the temperature of the milk, being greater at the lower temperature. The amount of foam dilution was found to average 0.3073 grams per quart of milk.

The amount of moisture absorbed by the walls of the quart containers was found to vary from 0.5 to 2.5 grams. Somewhat more moisture is retained by the heavy (.019 inch) paper than by the light (.016 inch) paper. The most important factors, however, were the time and temperature of storing the containers, the greatest retention taking place at the higher storage temperature and at the longer storage period.

Bulging of the side walls is one of the minor problems connected with the use of paper milk containers. A certain rigidity of side walls is desirable from the standpoint of ease of handling and prevention of leaking. The greatest bulging naturally occurs at the higher storage temperatures. Neither the weight of the paper used nor the type of dairy product placed in the container is a significant factor. Slightly greater bulging occurred when the higher melting point paraffin was used. This was particularly true when the containers were dipped at low temperatures (160° and 170°F.).

There is but slight difference in the rate of temperature change of milk in glass and paper containers, though

2543 the milk in paper warms slightly slower. When the paper and glass containers are packed in their respective cases the rise in temperature is much slower in the case of the milk in paper containers. In one experiment the milk in glass bottles in wooden cases stored at room temperature was slightly warmer after three hours than was that in paper containers stored in paper cartons after seven hours.

The detriment effect of sunlight upon the flavor of milk in glass bottles has been known for some time. While milk stored in paper containers will acquire the "sunshine flavor," the effect of the sun is not nearly so serious as it is in the case of the milk in glass bottles.

Consumer tests based upon 221 completed questionnaires returned by the milk customers on the University milk route have shown a preference for the paper in most respects. From a sanitary point of view the majority of users preferred the paper. Few thought there was any difference in the flavor of the milk, its keeping quality, and its tendency to freeze or the rate of temperature rise. It was almost a unanimous opinion that the paper containers took up less space in the refrigerator and were more convenient for picnics, etc. The glass bottle was picked for greater ease of pouring from and for ease of separating the cream from the skim milk. A slight majority preferred the paper container to the glass container when the milk sold for the same price, but at one cent less, 75 per cent indicated a preference for the paper container. Whether the milk was purchased from a store or was delivered made no material difference as far as preference was concerned.

Some of the favorable individual comments were as follows:

1.	Easier to handle by delivery man	2
2.	No washing of bottles	51
3.	No breaking or chipping of bottles	14
4.	No bottle to return	32
5.	Moisture does not condense as much as on glass	1
6.	Empty containers make garbage containers	4
7.	Excellent for picnics, pack easily and easily disposed of	4
8.	Good containers for other foods in ice box	7
9.	Containers easy to dispose of	8
10.	Good for kindling	6
11.	More easily handled	12

12. Easier to close after being opened..... 3
13. Less weight on refrigerator shelf..... 2
14. Bottles easy to open..... 4
15. Eliminates noise of bottles and cases early in the morning 3

2544

VIII.

Side View of Pure-Pak Instillation Complete and in Operation.

2546 PLAINTIFF'S EXHIBIT 5.

(Letterhead of City of Philadelphia, Bureau of Health.)

November 27, 1936

Silver Seal Dairy Products Company
612 South 24th Street
Philadelphia, Pa.
Attention—Mr. Edward Fuller, President

Dear Mr. Fuller:

In reply to your query of November 23, regarding the use of paper milk bottles in the City of Philadelphia, we have found that they have complied with all the sanitary laws of this City, and from an inspection which I, personally, made at your plant, I believe they are most decidedly a progressive step in the sanitary handling of milk.

It might be interesting to you to know that Silver Seal milk in paper packages is used exclusively in my home. Unfortunately, however, I cannot permit you to use this statement for advertising purposes, but you are privileged to show it to any other health authority.

Very truly yours

Herbert M. Packer
Herbert M. Packer
Chief of Division

HMP/ER

2547 PLAINTIFF'S EXHIBIT 6.

(Letterhead of Department of Health, Jersey City, N. J.)

November 28, 1936.

Mr. Edward R. Fuller, President,
Silver Seal Dairy Products Co.,
612 South 24th St.,
Philadelphia, Pa.

Dear Mr. Fuller:

With reference to information requested by you in communication dated November 27th.

Answering your second question first, this department does not object to distribution of milk in paper containers provided the containers are paraffined in the plant where they are filled and just prior to filling.

Milk has been distributed in paper containers in Jersey City by four large milk companies for over a year, we see nothing objectionable about this method of distribution and apparently it is satisfactory to the consumer.

Yours very truly,

Dennis J. Sullivan
Dennis J. Sullivan
Deputy Health Officer.

2548 PLAINTIFF'S EXHIBIT 7.

(Letterhead of City of Wilmington, Delaware.)

November 30, 1936.

Mr. Edward R. Fuller, President,
Silver Seal Dairy Products Co.,
612 S. 24th St.,
Philadelphia, Penna.

Dear Mr. Fuller:

In answer to your phone call of November 27th in reference to our finding of paper containers.

I want to say that they are without a doubt the best in our city, from a bacteria count they are almost 100%. I have never picked up a sample over 3,000 bacteria since they have been coming into our city, and I have visited your plant and find it complying with all our rules and regulations from a health standpoint.

Very truly yours,

John C. Foote,
John C. Foote,
Milk Inspector.

P. S. As you know I was opposed to the containers when they first made their appearance but after giving them a fair trial here, I will say they are a perfect container and will be a credit in any community.

John C. Foote
J. C. Foote.

2549 **PLAINTIFF'S EXHIBIT 8.**

Commonwealth of Pennsylvania
Department of Health
Harrisburg.

December 1, 1936.

Silver Seal Dairy Products Co.,
612 S. 24th St.,
Philadelphia, Pa.

Attention: Mr. Fuller, Pres.

Gentlemen:

I am very glad to give you my opinion on the use of a paper container for milk distribution.

The Pennsylvania Department of Health has for a long time approved the use of paper containers for milk distribution. This includes the paper container which is made in the factory and paraffined before shipment to the milk plant in a sealed package, and the paper container made completely in the milk plant and subjected to a bath of hot paraffin just before filling. We think this latter bottle furnishes a container for milk which more nearly meets our standards for a sterile milk container than does the glass bottle put through the average soaker type washer where it has been subjected to an alkaline treatment and later a steam or hot water treatment.

We have not been satisfied with the condition of the average glass bottle as it comes from a soaker type washer. It has been our experience that it is difficult to get a complete job of sterilization of the glass container due to the mechanical failures of the machine, the maintenance of the proper water temperatures and the fact that the glass container has gone through an alkaline solution which, because of not being changed frequently may be a source of contamination rather than a cleansing agent. We feel so strongly on this subject that we contemplate adding a last rinse with chlorinated water.

Supervision of a milk supply is much easier from a health standpoint where a paper container is in use than with a glass container. We also like the idea of the paper container being used once and then destroyed. A glass container lends itself so easily to so many uses other than that of a container for milk and so often gets back to the milk

plant in such bad condition that sterilization is such a difficult job that we could welcome the extension of the use of a paper container more generally.

Very truly yours,
W. K. Moffett
W. K. Moffet, P.
WKM:P *Director, Bureau of Milk Sanitation.*

2550 PLAINTIFF'S EXHIBIT 10.

(Letterhead of Milk Control District No. 1, Ardmore, Pa.)

Silver Seal Dairy,
612 South 24th St.,
Philadelphia, Penna.

December 2, 1936.

Gentlemen:

In response to your recent inquiry, please be advised that I am satisfied that the Silver Seal Dairies have met substantially all of the requirements for the production, processing distribution and sale of milk and cream in this District and have continued to do so. I particularly favor the use of the single service container for milk distribution. The difficulties we encounter in washing glass bottles are such that I doubt that they will ever be fully overcome.

Very truly yours,
Geo. W. Grim.
George W. Grim.

2551 PLAINTIFF'S EXHIBIT 11.

(Letterhead of Health Department of the City of Baltimore.)

January 5, 1937

Mr. Edward R. Fuller,
President,
Maryland Seal Dairy Products Corporation,
56 Central Savings Bank Building, Baltimore, Md.

Dear Mr. Fuller:

In reference to the application which you filed with this department on October 9, 1936, for a pasteurizing milk plant permit and the use of the paper container (Pure Pak) for the sale of milk in the city of Baltimore, I wish

to advise you that after giving very careful study to the matter and in accordance with Article 16, Section 64, Rule 12 of Baltimore City Code of 1927, which reads as follows:

"Pasteurized milk or cream shall not be bottled or placed in other receptacles in any place other than in the plant where it has been pasteurized. No person or dealer in milk shall offer for sale, sell or deliver any milk or cream in quantities of less than one gallon unless the same be kept, offered for sale, sold or delivered in sanitary glass bottles or such other receptacles or in such other manner as may be approved by the Commissioner of Health"

I hereby approve for use in the city of Baltimore the paper container known as the Pure Pak provided the Maryland Seal Dairy Products Corporation complies fully with the following requirements of the Commissioner of Health of Baltimore City:

1) That the paper blanks are to be received by the dairy dye-cut, printed with the type of milk or milk products sold, name of the dairy, address of the dairy and the day of pasteurization, and that no advertising matter other than that required under the Cap Regulation of this department shall be contained thereon, and

2) That the paper blanks are to be shipped by the paper manufacturer to the dairy in tightly closed containers and are to be made from the best obtainable white Spruce pulp and that no discarded material is to be used in the manufacture of the paper blanks, and

2552 3) That glue used on the side seams of the blanks by the paper manufacturer is to be either of a soy bean glue or tapioca glue base and, further, that the glue used by the dairy in glueing the bottom of the container is to be also of a soy bean or tapioca glue base, and

4) That paraffin bath used for the submerging of the container is to be maintained in a flooded condition at all times so as to insure the complete submersion of the container in paraffin, and

5) That the paraffin used is to be of the highest obtainable quality and that the paraffin catch-basin is to be drained daily; further, that there is to be maintained an automatic feed of paraffin which shall pass through the smallest possible screen through which melted paraffin can pass and that the paraffin bath shall be completely drained every week or more often if necessary and that no drawn-off or salvaged paraffin from the bath shall ever be used for the paraffin of the containers, and

6) That machine shall be equipped with a thermo-regulator which will maintain at all times a temperature of 180 degrees in the paraffin bath, plus or minus, as is desired for the complete coverage of the container with paraffin, and.

7) That the machine shall be so designed as to make it impossible for any hand contact whatsoever with the container prior to its being filled and sealed, and

8) That the parts of the machine used in the filling of container shall be free from pits, cracks and crevices, and shall be so constructed that they can be readily cleansed and sterilized, and

9) That the measuring device used in connection with the filling of the container shall be set in accordance with the regulations of the Bureau of Weights & Measures, with the understanding that if any adjustments are necessary in connection with this procedure that they shall not conflict with the sanitary regulations of this department, and

10) That the Maryland Seal Dairy Products Corporation agrees to comply with all requirements of the Commissioner of Health of Baltimore City which, in his opinion, may subsequently be necessary for public health protection in addition to those hereinbefore specified.

To make the above approval binding and in accordance with the provisions of the City Ordinance I hereby request that you acknowledge receipt of this letter and that in your acknowledgment you assure me that the Maryland Seal Dairy Products Corporation will comply fully with the ten requirements as specified in this letter.

I will expect you to closely work with Mr. J. M. Lescure, Director, Bureau of Milk Control, in the approval of your plans and lay-out for your building and also the approval of the different appliances used in connection with the operation of your company.

Very truly yours,

H. Huntington Williams, M.D.,
Commissioner of Health.

2553 **PLAINTIFF'S EXHIBIT 12.**

Sanitation of Paper Milk Containers.*

By J. R. Sanborn and Robert S. Breed,**
New York State Experiment Station, Geneva, N. Y.

The present discussion will necessarily be limited to a study of paper milk containers from the standpoint of the laboratory. If information is desired regarding the practical problems involved in their use, savings, cost, relative merits of various types of containers, etc., it will be found that the men in the industry that have had real experience can answer these questions better than anyone else.

It so happens that the use of paper milk containers has been greatest in the New York metropolitan area. The Sheffield Farms Company, Inc., was a pioneer in a study of the practicability of these containers. Later, the Borden Company studied the practical problems involved on an even more extensive scale through their subsidiary, Dairy Sealed, Inc., of Ozone Park, Long Island. The latter plant was built to determine what economies could be effected where all milk and cream handled in a milk plant was packaged in paper containers.

The results of our own sanitation studies are presented here in a series of tables. A map (Fig. 1) has also been prepared which gives the location of cities where installations have been made for bottling milk in paper containers. Such containers are also used in many other cities for minor purposes, such as for delivery of milk and cream to quarantined residences, and distribution of buttermilk and other dairy products. The map is not entirely accurate as rapid changes are taking place, but it is reasonably so. Approximately 1,200,000 single service milk and cream bottles are used daily in this country.

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* Presented before the Laboratory Section of the 31st Annual Convention, International Association of Milk Dealers, Cleveland, Ohio, Oct. 18, 1938.

** Approved by the Director of the New York State Agricultural Experiment Station for publication as Journal Paper No. 300, December 7, 1938.

Figure 1

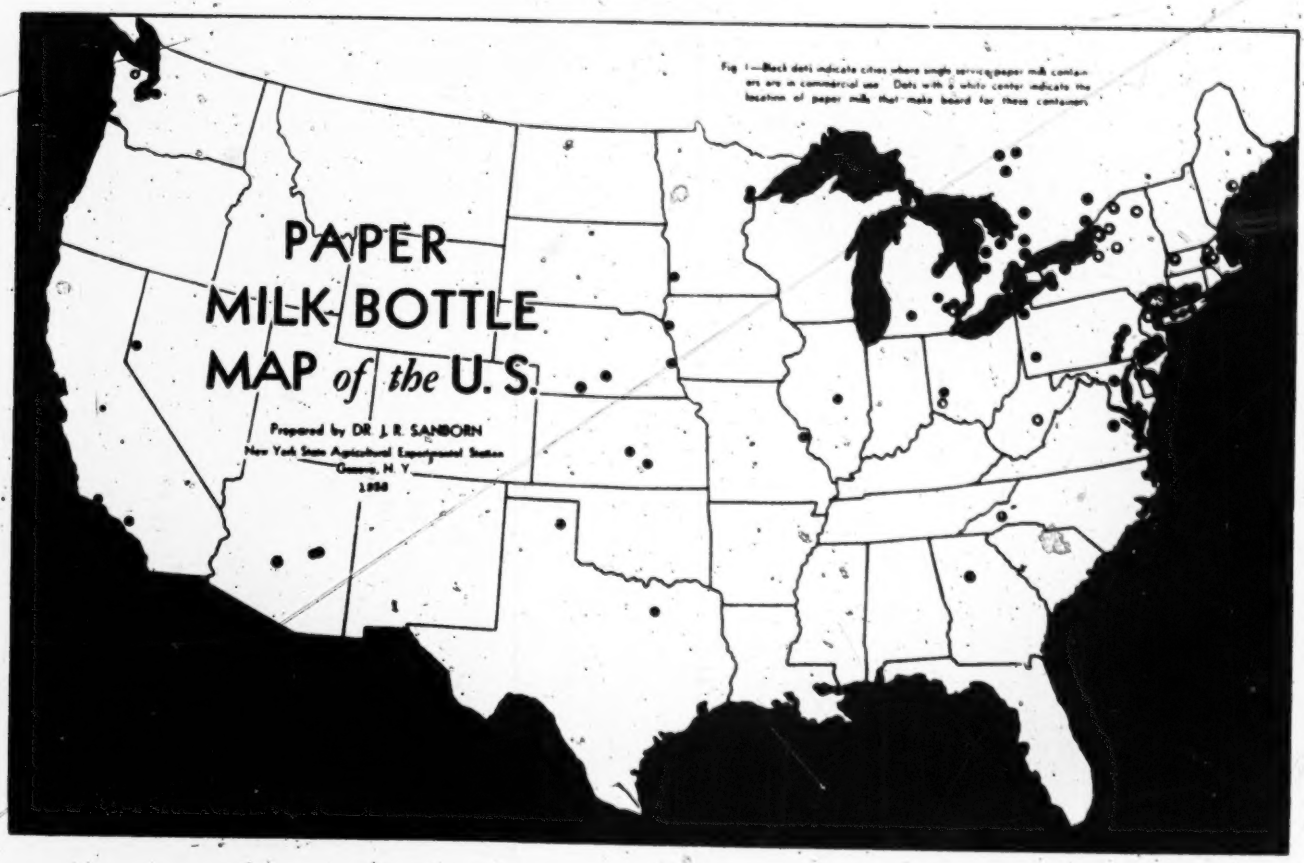


Fig. 1—Black dots indicate cities where single service paper milk containers are in commercial use. Dots with a white center indicate the location of paper mills that make board for these containers
PAPER
MILK BOTTLE
MAP of the U. S.
Prepared by DR. J. R. SANBORN
New York State Agricultural Experiment Station
Geneva, N. Y.
1950

The location of paper mills that make the paper board used for these milk bottles is indicated on the map by the use of black dots with a white center. A surprising number of them are located in the area in and near New York State.

As some persons may not be familiar with the various types of single service milk containers, two photographs are shown. The first (Fig. 2) includes paper containers that have been tried out in at least one practical installation. Some containers are filled from the top, some are filled from the bottom; some are completely fabricated, others are partially fabricated, and still others are made from blanks and paraffined in the milk plant just before they are filled with milk or cream.

As a matter of general interest a second photograph (Fig. 3) which includes types of single service containers in use in Canada and Europe. These have been secured from investigators in other countries whose replies indicate that no other country is using this type of container as extensively as is the United States. It is stated that about 400,000 are used daily in Great Britain and that plans are being made to double this number in the near future.

The pictures give some idea of the varied nature of these containers. There may be some that find advantage in this fact but there are many that find diversity a disadvantage.

Figure 2

Figure 3

Fig. 2 (above)—Paper milk containers in commercial use in the U. S. A.
Fig. 3 (lower)—Paper milk containers in use in other countries.

As soon as a real study of the sanitary problems affecting the use of paper milk containers is started, it becomes evident that this is only a part of the larger problem of the sanitary use of paper wrappers and containers for all kinds of food. While milk is the most perishable and easily contaminated food that is placed in paper containers, other perishable foods such as dairy products (sour cream, frozen cream, cottage cheese, ice cream, etc.); oysters, meats, or less perishable products such as bread and the like, deserve really clean and sanitary handling in paper containers and wrappers. Much attention has been given by the paper industry to the development of sanitary wrappers and containers; but their efforts have never been extensively studied and judged by outside agencies. In fact, no very satisfactory methods have been developed for doing this.

In the case of paper milk bottles, there are two general classes of sanitary problems (1) those that arise in the making of containers themselves and (2) those that arise in connection with the shipping, storage and use of the containers in milk plants.

In the present report chief attention is given to the sanitary problems that arise in connection with the making of the containers. The nature of the second type of problem is well indicated in the suggested sanitary regulations developed in connection with two conferences on this subject that have been held at the Experiment Station at Geneva.* They concern proper methods of shipping, storing and handling of finished containers, proper methods of filling containers with milk and cream, and proper methods of keeping filled containers cool and clean until delivered to the consumer.

The most important measure of sanitation that is applied to the finished container is to determine its bac-

* Jour. Milk Technology, 1, 1938, 47-53.

Table I—Rinse Counts Obtained from Various Types of Containers

Container Type	Total Number	Rinse Counts per Container during 1937						Rinse Counts per Container during 1938					
		Percentage showing no growth	0-5	6-100	101-250	251-500	500+	Percentage showing no growth	0-5	6-100	101-250	251-500	500+
1	4587	43	88	10	1.5	0.14	0.36	57	93	6	0.93	0	0.07
2	1523	9	85	10	1	0.7	3.3	31	76	20	2.0	0.4	1.6
3	1299	0.5	13	80	3	1.4	2.6	22	70	27	0.7	0.3	2.0
4	180	—	—	—	—	—	—	34	83	15	0.3	0	1.7
5	70	—	—	—	—	—	—	37	87	12	1	0	0
6	120	18	71	27	2	0	0	—	—	—	—	—	—
7	74	12	60	36	4	0	0	—	—	—	—	—	—

teriological condition as filled with milk. This is
2554 partially accomplished by rinse tests. As soon as rinse tests were made it was found that the paper containers were so nearly sterile that some modification was needed of the usual standard rinse procedure for glass bottles which is carried out by rinsing with 100 c.c. of sterile water. The tests of the paper containers have been carried out by rinsing with 10 c.c. of sterile water, the entire amount of the rinse water being used as an inoculum in one large or three ordinary size petri plates. Because frequently under these conditions no colonies developed on the agar plates, an even more severe technic was developed. In this technic 10 c.c. of sterile broth was added to each of a series of finished containers. After shaking and incubating, the percentage of containers in which the broth remained sterile was noted.

Table I shows the results obtained from the examination of nearly 8,000 paper milk bottles of seven different types. The work was done in a series of nine cooperating public health and industrial laboratories, duplicate lots of containers being collected by random sampling, carried out under supervision in 12 different factories or milk plants. As an improvement in conditions was noted as the work progressed, results are arranged so as to contrast the findings secured in 1937 with those secured in 1938. This improvement is noted best by comparing the number of containers examined in 1937 that show no growth of colonies on the plates (Column 3) with the similar results obtained in 1938 (Column 9). A few containers were found that gave counts in excess of 500 per container. The number of these found in 1938 (last column) was somewhat lower than the number found in 1937 (Column 8). It is not clear why these higher counts occur. The number of these counts is always small and their appearance in a series of counts irregular. It is even possible that faulty technic may account for some of them. It is very rare for any of these higher counts to reach a size greater than one per c.c. of capacity, the standard usually accepted as a reasonable one for milk containers.

While the cause of these higher counts is being sought in an effort to eliminate them, the significant figure to note is that, regardless of the type of container, the number of essentially sterile containers is large. In 1938, all containers tested showed more than 70 per cent with counts

less than 5 colonies per container, not per c.c. the commonly used unit of measurement for bacterial counts from milk.

In other words, the number of bacteria added to a quart of milk from a paper container even where the number present in the container is relatively large is still so small that it would cause no detectable increase in the count per c.c. of milk. In fact, a container that yields a count of less than 5 colonies per container may be regarded as essentially sterile.

Moreover, when the nature of the few bacteria present is determined it is found that they are common non-pathogenic, spore-bearing bacteria (Bacillus subtilis, Bacillus cereus, Bacillus mesentericus, etc.), saprophytic micrococci, sarcinae, and actinomyces, and some spores from wood fungi. All of these, with many other microorganisms, are found in the pulp suspension as it is carried to the paper machine and over the hot drier rolls in the paper making process. The surviving organisms are all of very heat resistant types as the temperatures reached are much higher than those used in the pasteurization of milk. No pathogenic organisms could survive the temperatures used.

Milk container board is made from virgin stock so far as we have discovered in visiting a dozen mills making this type of paperboard. Some of the stock may be ground wood pulp but it is usually chemically purified by the sulfite or sulfate process. A variety of coniferous trees are used for the logs out of which the paper is made. In the Eastern United States, a variety of spruces are used, such as white, black and red spruce. Eastern hemlock and balsam fir logs are also accepted. In the south, the southern yellow pine is used and in the northwest, western hemlock. The pulp made from the washed logs is usually sterile either as made by the hot grinding process, or as it comes from the chemical digesters. However, as the pulp is floated in water and allowed to circulate through pipes and chests, microorganisms develop almost as readily as they do in milk. Where dead ends are found, storage of white water is practiced, or other conditions are permitted that allow opportunity for growth of bacteria and other microorganisms, they develop in large numbers.

For this reason, a determination of the number of living bacteria per gram of disintegrated board becomes a meas-

ure of the bacterial condition of the pulp. This record secured from the finished product even more accurately interprets conditions previous to the paper making processes than similar counts from pasteurized milk interpret the bacteriological condition of the raw milk.

Table II shows the results obtained from plating disintegrated pulp from 824 samples of board manufactured

Table II—Bacterial Counts Per Gram of Disintegrated Paperboard Obtained Between July, 1937, and October, 1938.

Grades of Paper	Total Number Tests	Percentage showing no growth	Percentage yielding counts between 1-50	51-100	101-250	251-500	501-1,000	1,001-10,000	10,001-40,000
Paperboard of Virgin Stock									
Milk container board	824	5	30	26	21	10	8	0	0
Ice cream and butter boxes; cut, plate, cap stock	77	4	47	35	7	5	2	0	0
Paper straws	25	44	56	0	0	0	0	0	0
Paperboard containing Secondary Stock									
Fiber cans, breakfast food cartons, etc.	52	0	0	0	0	10	8	48	34

for use in milk bottles. About 5 per cent of these tests yielded plates that did not develop any colonies. Such sterile plates have been found more frequently in recent months since the paper mills have given greater attention to maintaining better conditions in their plants. Some counts have, however, been higher than 500 per gram of board and have even reached a thousand per gram of board where mill operators have not yet succeeded in bringing about proper conditions in the mills.

Results secured from the disintegration of paper straws shows even lower counts than those from the milk bottle board. The low counts are probably due to the fact that the thin walled straws are impregnated with paraffin at a very high temperature, rather than because they are made from better pulp than the milk bottle board.

Seventy-seven tests of ice cream containers, butter

boxes, cup, plate and milk bottle cap stock made from virgin stock yielded results much like those secured from milk bottle board.

However, when paper materials containing secondary stock (envelope trim, old newspapers, waste papers, etc.) are examined the counts are much higher. Stock of this sort is used in some ice cream cans, breakfast food cartons and the like. No counts were obtained from boards containing secondary stock that were lower than 250 per gram of stock and 34 per cent of the counts were greater than 10,000 per gram. None exceeded 40,000 per gram. Counts that indicate the presence of numerous bacteria are common as less care is given in making the board that is used in packaging dry foods than is given board used in packaging moist, easily contaminated foods.

If Table II had been arranged so as to contrast results secured in 1937 with those secured in 1938, improvements would have been shown particularly where mills have given special attention to the production of a paper board that is essentially sterile.

Some public health officials have said to us, "Why worry over a few bacteria that may get into milk from wood pulp when they are of harmless types? The number of harmless bacteria in the best of our milk supplies is so large per quart bottle that the addition of 5 to 250 per bottle from the wood pulp is meaningless?"

This is really true but our answer has been, "When it is easily possible to have the containers essentially sterile, why not have them so?" In fact, we believe that the paper industry will really effect economies in making a sanitary paper board sufficient to pay the additional costs involved.

Some factors other than the bacteriological condition of the board help to determine the final count. Adhesives are used in the making of all paper milk bottles. Unless the adhesive is sterile, bacteria may be added to the container in quite large numbers. If fermentable starchy, or casein adhesives are used, care must be taken to keep them sterile. The thermoplastic, non-fermentable adhesives that are coming into general use are even better.

Moisture proofing also influences the rinse count of the finished container. If this is not done efficiently the milk may soak into the paper board used for bottles or bottle caps and become contaminated with such bacteria as are

found in the board. When the paraffining is done properly, the bacteria are held in the board and thereby prevented from appearing in the rinse water.

Efficient coating with paraffin is dependent upon many things, but in a general way, the best coating is accomplished at temperatures between 165 and 175° F. Where high temperatures are used (250° F.) to impregnate the board, a second paraffining is sometimes used at the lower temperature in order to coat the board. Where board is left partially exposed as may occur when temperatures over 175° are used, rinse counts from such containers are usually higher than from well coated bottles. This happens even though the high temperature used in paraffining might be expected to kill the bacteria more effectively. Where containers are not effectively moisture proofed, successive rinses with sterile water yield counts as high as those from the first rinse even after as many as ten trials.

From these data, it is evident that paper milk bottles are capable of meeting very severe sanitary standards as indicated by the success thus far attained in making board with a very low bacterial content and by the very low rinse counts of the finished containers. The sanitary condition of the finished container is comparable with the sanitary condition of the glass bottles found on well operated certified farms. Rinse counts for glass bottles as washed and sterilized in ordinary milk plants are higher and sometimes much higher than those obtained from paper bottles. Data supporting this statement will be found in the general summaries prepared by the Committee on Milk Supply of the Public Health Engineering Section of the American Public Health Association.* In these reports it is stated that only 56.9 per cent of the glass bottles examined from milk plants met a standard of less than one bacterium per c.c. of capacity, i. e., approximately 946 per quart container.

In a general way, paper containers can, therefore, meet much more severe rinse count standards than the average glass bottle provided they are properly handled and stored in the interval between the time when they are manufactured and the time when they are filled with milk. Improper conditions are detectable by the local dairy inspection group and can be eliminated where the industry un-

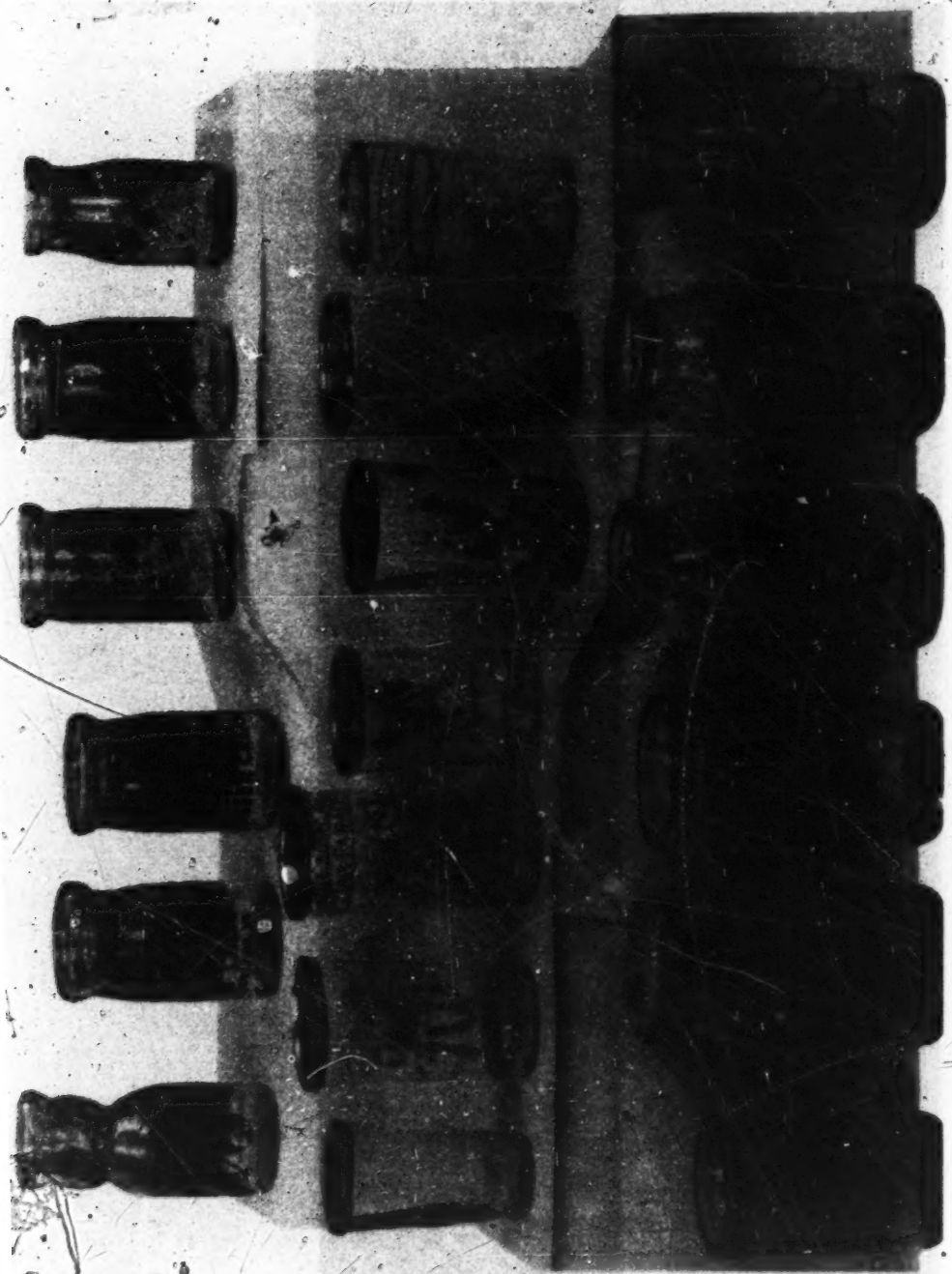
* Yearbooks for 1933-34, p. 72, and 1934-35, p. 160.

derstands the situation and the dairy inspector carries out his duties.

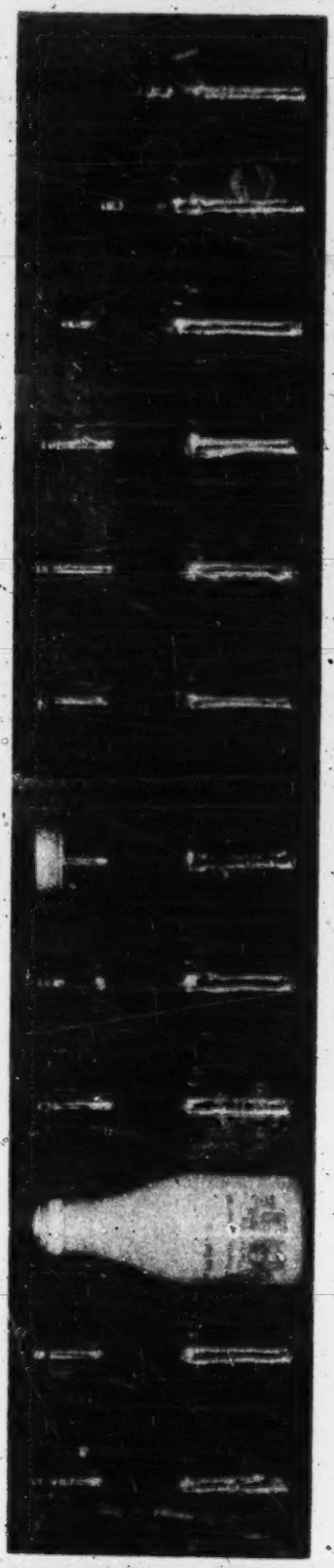
Several makers of paper milk bottles feel that they can maintain higher standards of sanitation during the manufacture of these paper containers where this manufacture is carried out under their own supervision in their own factories. Other makers supervise the fabrication of their containers in milk plants. It would seem as though the place where the sterilization is accomplished is not a vital issue. The important matter is to have the finished containers clean and essentially sterile when filled with milk. In all cases, we feel that the single service containers should be able to meet a standard of freedom from pathogenic organisms even more severe than those enforceable for our present milk containers.

1493

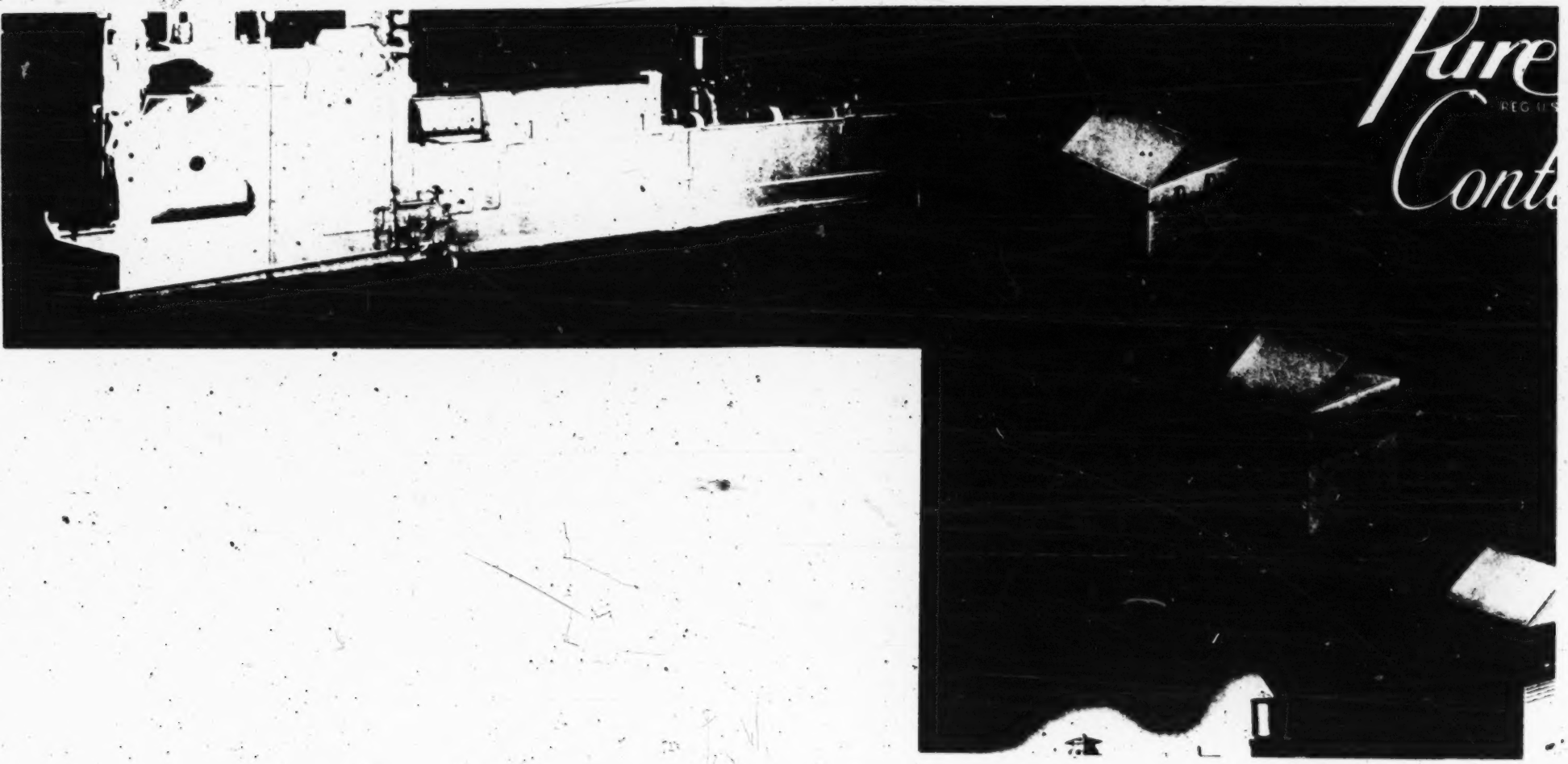
Plaintiff's Exhibit 13

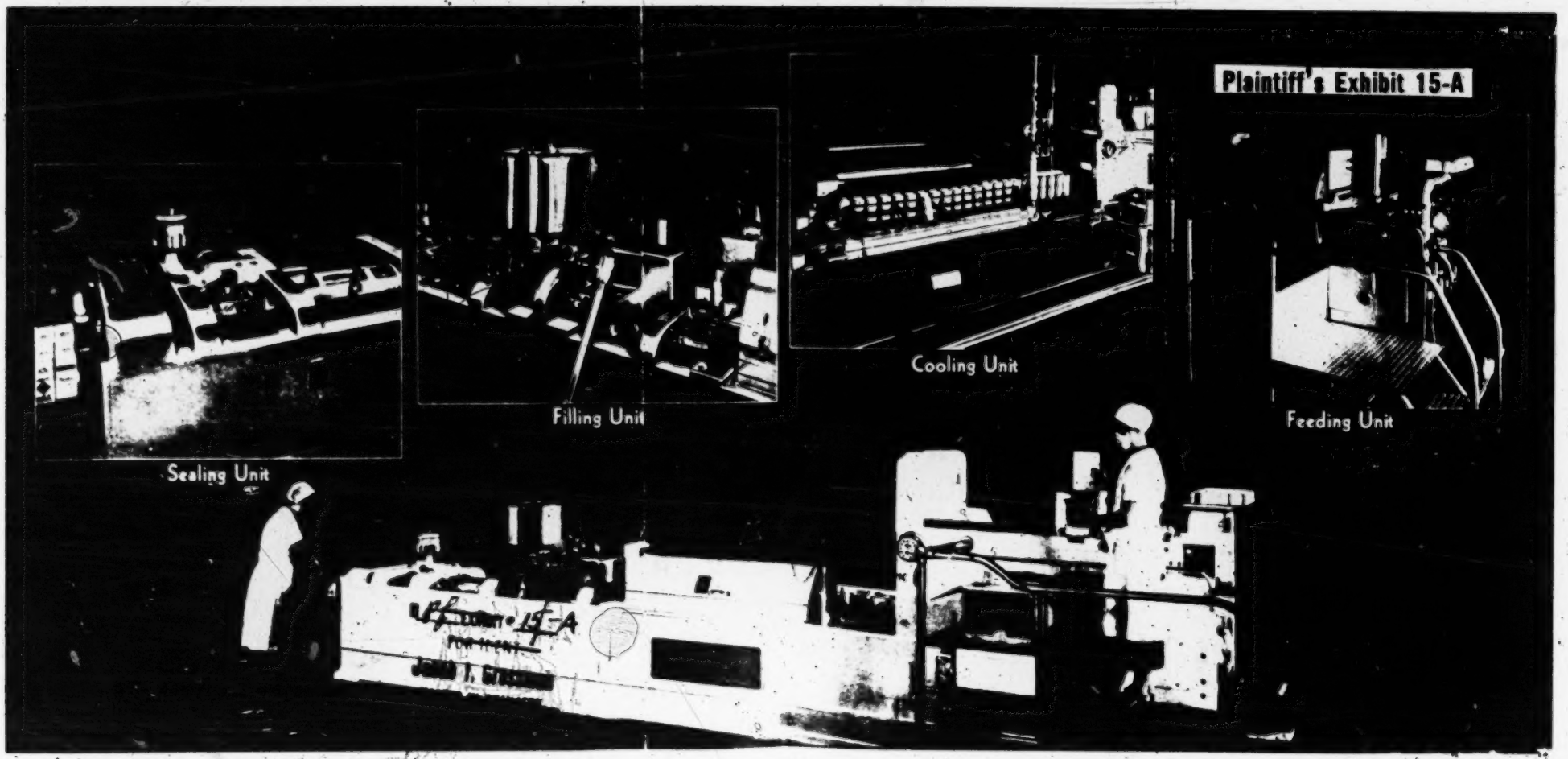


Plaintiff's Exhibit 14



Plaintiffs' Exhibit No. 15 is omitted at this point as the same appears as figures 2 and 3 of Plaintiffs' Exhibit No. 12.


Pure
Cont


Plaintiff's Exhibit 15-A
Sealing Unit
Filling Unit
Cooling Unit
Feeding Unit

2561 **EXHIBIT NO. 16.**

Single Service Containers for Milk and Milk Products.

J. R. Sanborn and Robert S. Breed.

New York State Agricultural Experiment Station, Geneva, New York.

Recent Developments in Paper Milk Container Sanitation.

The single service paper container for milk and milk products in being subjected to critical sanitary investigation. Since last summer, two paper container conferences have been held at the New York State Agricultural Experiment Station for the purpose of considering problems in standardization and control. Those present included public health officials, paper container manufacturers, research workers, and representatives from the dairy and pulp and paper industries. Recognizing the definite place that single service containers seem destined to occupy in milk distribution for metropolitan areas, these conferences discussed improvements in and control of methods of manufacture and handling so as to secure the highest possible sanitary quality. In New York metropolitan district, paper milk containers have been allowed to develop normally, which has been particularly helpful in revealing both the satisfactory and the unsatisfactory features involved in their manufacture and use. In this way it is possible to work effectively toward correcting undesirable conditions.

In the course of its relatively brief period of practical use, the paper milk container has spread thoroughout metropolitan New York and reached various cities of the middle West, South and West Coast, extending to Seattle and Los Angeles and into Canada. One milk plant in New York City which, in March, 1937, turned out daily 160,000 to 180,000 paper packages of milk and cream, had increased its output in June of last year to 250,000 packages. It is estimated that the daily use in this country of milk and cream in paper amounts to approximately 1,200,000 of these single service containers. Almost one-half of this production is used in New York City. Over one hundred towns and cities in the United States and about thirty in Canada, employ

paper containers regularly for the distribution of milk and cream. Their use for buttermilk and other milk products is practically universal.

Public Health Significance.

Public health agencies are availing themselves more and more of the benefits which may be derived from the use of single service containers. In cases infectious disease, delivery of milk in paper containers is an important factor in control. There are indications that this means of distributing milk may decrease incidence of contagious disease during epidemics and eliminate the possibility of spreading pathogenic organisms from house to house. The use of single service containers for milk is advisable in quarantined residences, hospitals, and other institutions caring for infectious diseases.

Bacteriological Control in the Manufacture of Milk Container Board.

The pulp and paper industry little realized the situation it was facing when it attempted to put such a perishable food as milk in paper. While clean, sound pulp wood is an entirely suitable raw material for the fabrication of containers for perishable foods, conditions for the manufacture and handling of pulp and paper are sometimes not sufficiently clean and sanitary to meet public health standards. In order to secure and maintain a high standard of sanitary quality, a group of mills producing milk container board has undertaken an extensive program of microbiological control and voluntary inspection. Wood pulp is produced in a bacteria-free state and it is the purpose of these mills to utilize methods of treatment and handling that will preserve the bacteriological and chemical purity of food wrapper and container stock. The methods used are based upon cleanliness, process water purification and bactericidal treatments.

The paper produced by most of these mills is of high sanitary quality and as nearly sterile as it is possible to make it. Milk container board is carefully wrapped and shipped under conditions that protect rolls of paper or sheeted stock from contamination. Container factories, converting plants and dairies are becoming increasingly appreciative of the

importance of maintaining the clean and bacteria-free condition of the foundation board. Investigation has shown that the sanitary state of this board usually determines the sanitary state of the finished containers. Methods and facilities for handling or manipulating this board must not, therefore, nullify the sterilizing effects produced during its manufacture. These effects may be preserved or enhanced through the development of efficient methods of container fabrication.

The lessening of human contacts with container board and the general utilization of mechanical methods of handling, provide a direct means of protecting sterile board. The sealing of containers by means of non-fermentable adhesives, preferably synthetic, thermoplastic varieties, aids in the maintenance of high quality. Finally, the application of a suitable moisture-proof coating renders the paper container sufficiently non-absorbent to serve as a convenient and efficient receptacle for receiving and distributing milk and milk products. The moisture-proofing material generally used at present is fully refined paraffin which, in addition, may also act as a secondary line of defense when applied in the hot, molten state by eliminating such organisms as may reach the container by casual contamination. Other moisture-proofing treatments are under investigation. Whatever future developments may be, however, it will always be necessary to rely upon the sanitary condition of the foundation board for uniform sterility and high quality.

Standardization and Quality Control.

Laboratory examination of container shipments includes determination of the bacterial content of paper blanks used in fabrication processes as well as of finished containers by disintegration and rinse methods. These products are also examined for sterility, efficiency of coating, dirt, slime spots and other foreign matter. The results of rinse tests and visual inspections show close correlations with bacteriological counts of the original board. Technic for making these counts has been developed and described during the present investigation.[1] It consists of repulping the board in sterile water by means of a sterilized beating device and plating the resulting pulp sus-

1. American Journal of Public Health (1938) 28; 576.

pension according to standard bacteriological procedure. The results are reported in terms of the number of colonies developing per gram of board.

Pulp and paper mills will derive considerable benefit from a knowledge of the bacterial content of a run of board and control measures, if necessary, may then be effectively employed. Container manufacturers and public health laboratories will also find such a disintegration method useful in determining quality.

A tentative board count of 500 colonies per gram has been set as a reasonable and enforceable standard. Mills will ordinarily be able to meet a much more severe standard. Due, however, to temporary partially unexplainable increases in board counts during certain seasons of the year, it seems advisable to retain, for the present the maximum count of 500. Cooperating pulp and paper mills are uniting in a program of sanitary control that should promptly bring to the paper container industry a board which is nearly or actually sterile.

In more than 500 bacteriological examinations of board from nine different mills, using the disintegration technic, 53 per cent yielded less than 100 colonies per gram. According to the best record made last year by a single mill, in 150 tests, 85 per cent of the examination yielded less than 100 colonies per gram. Samples of milk container board from this mill are sometimes essentially bacteria-free.

This is a worth-while contribution to sanitary food packaging. The use of secondary stock consisting of old newspapers, envelope clippings, chip board, and cellulose waste, in the manufacture of food containers such as bulk ice cream cans and breakfast food cartons has sometimes resulted in undesirable contaminations. The bacterial content of boards of these types usually varies from 2,000 to 50,000 per gram. For milk container board, on the other hand, only virgin chemical or mechanical pulp is employed, which is pulp that has not previously been used for commercial purposes. This high quality stock is the only kind that should be used in paper containers for perishable foods.

When food container board is made from virgin pulp using pure process water and under sanitary methods of manufacture, a paper board is produced which is free from all chemical reagents and other foreign matter, and all except a few non-pathogenic types of heat resistant bacteria.

This makes a product that is entirely suitable for direct contact with dairy products.

Read before the Joint Annual Conference of the American Association of Medical Milk Commissions and Certified Milk Producers' Association of America, The Clift Hotel, San Francisco, Calif., June 13, 14, 1938.

2562 PLAINTIFF'S EXHIBIT NO. 17.

Reprinted from Paper Trade Journal, March 17, 1938
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Reasonable Sanitary Standards for Paper Products.*

By J. R. Sanbord.[1]

Abstract.

Reasonable sanitary standards for food wrappers, food containers, paper drinking cups, and hospital cellulose are under consideration by public health authorities and purchasing departments. Bacteriological examination of paper and container board provides health laboratories with a means of determining the sanitary condition of these products and judging the probable sanitary state of mills that produce such paper. Studies of number and types of bacteria in pulp and paper show a close correlation with degrees of microbiological control established during manufacture. Effective microbiological control means adequate and consistent purification of process water; general plant sanitation and cleanliness; utilization of uncontaminated high grade pulps and raw materials; employment of bacteria-free water at calenders; effective use of bactericidal treatments; and strict methods of slime prevention.

Microbiological Problems in Pulp and Paper Manufacture.

For many years it has been known that pulp and paper mills provide favorable conditions for the growth and mul-

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 21-24, 1938.

1. Member TAPPI, New York Agricultural Experiment Station, Geneva, N. Y.

* Approved by the Director of the New York State Agricultural Experiment Station for publication as Journal Paper No. 255, February 11, 1938.

tiplication of microorganisms. Nearly all of these organisms come from water supplies, though pulp wood and various raw materials may contribute to the contamination. The activities of pulp and paper mill microorganisms are not usually apparent to mill operators until they reach advanced stages of development, when discoloration and decomposition of pulp, slime formation, or the occurrence of spotting or objectionable odors in finished products prove a menace to production and quality. These microbiological problems, which require the application of effective preventive measure, have caused the industry much trouble and economic loss.

In spite of the care that has been given to microbiological control, investigations of certain grades of pulp and paper have repeatedly demonstrated the presence of undesirable microorganisms from pulp and paper mills. This considerable bacterial contamination already recognized by paper makers as a factor detrimental to high quality, has caused public health officials and sanitarians to view critically and sometimes doubtfully, the hygienic condition of paper products.

Sanitary Quality in Paper Products.

Health groups and purchasing departments are interested in the sanitary condition of paper used in direct contact with milk and other perishable foods, and of products for personal and medical requirements, such as paper drinking cups and hospital cellulose. In order to secure the greatest possible suitability and safety in paper for various uses, sanitary standards and specifications are being extended and strengthened.

Meeting the need of health laboratories for a routine bacteriological method by which they can determine from total bacterial counts the hygienic condition of paper and judge the sanitary state of the pulp and paper mill producing it, a technic has been devised for rapid disintegration of paper to uniform suspensions suitable for bacteriological plating.

In view of the unusual public health significance of milk, an extensive investigation is being made of the bacterial content of food container board used for single service milk containers, carried or in conjunction with microbiological surveys of mill systems. Findings indicate, first, that close

correlations exist between mill sanitation and production of high quality board; second, mills which utilize polluted or inadequately purified water and fail to effectively curb the development of microorganisms throughout the process of pulp and paper manufacture cannot produce food container board which meets the requirements of public health authorities; third, periodic laxity in water purification, slime control, and cleanliness, increases the difficulty of producing paper conforming to sanitary specifications; fourth, in mills where strict control of microorganisms is maintained throughout the year, conditions are favorable for the production of paper board having low bacterial counts.

Sanitary Status of Pulp and Paper Mills.

The sanitary status of a mill depends upon the degree to which it achieves strict microbiological control. Strict microbiological control means adequate and consistent purification of process water; utilization of uncontaminated, high grade pulps and raw materials; effective use of bactericidal treatments to prevent contamination of system from re-used process water and colonization of microorganisms. Pulp and paper mills that fail in effective control must cope with a wide variety of microorganisms, many of which are sufficiently heat resistant to survive drier temperatures and form colonies in culture dishes prepared from aseptically disintegrated board. These counts may vary from 5,000 to 50,000 per gram of board, denoting a product that is decidedly unfit for direct contact with perishable foods.

Eliminating from consideration in connection with sanitary specifications all such inferior paper products as those just described, attention is mainly directed in this investigation to those mills which exert effective control of microorganisms. Container board samples from these mills yield counts that are consistently less than 500 per gram. The majority of mills producing milk container board give counts of less than 250, in a few cases less than 100 per gram, even approaching a bacteria-free state. The lowest count boards are as free from bacteria as bleached, 100 per cent sulphite tissue. Board mills producing counts under 100 per gram with reasonable regularity are usually fortunately situated with respect to natural purity of water

supplies and freedom from common sources of extraneous contamination. Bleaching operations may also be used to augment the efficiency of bacterial control.

While the thicker the board, the higher the bacterial counts appear to be, other factors such as drying temperatures, length of time of drying process, quality of pulp employed, microbiological conditions at mills, the purity of calender water, and care taken with the finished paper, also exert a decided influence on the number of colonies developing per gram of paper.

The secret of producing paper which is low in the number of bacteria present lies in bacteriological purification of water supplies and, in order to prevent colonization and spread of organisms, effective use of bactericidal treatments within mill systems. Colonization results in the formation of small slimy masses of growth which resist chemicals and heat and introduce into pulp and paper persistent and aggressive types of microorganisms. This development in its exaggerated forms is known to the mill operator as 'slime'. Rrom the standpoint of bacteriologists and sanitarians effective control means prevention of incipient growth accumulations by eliminating contamination at its sources and utilization of specific bactericidal treatments. Recommended procedures are neither expensive nor impractical. They include persistent cleanliness, constant supervision over portions of a system in which organisms readily multiply, employment of bacteria-free water at calenders, and effective use of bactericidal agents. The chief purpose of the microbiological survey is to increase the efficiency of control measures through specific knowledge of predominating types of organisms and of local points of contamination where bacteria-killing action is needed.

Reasonable Sanitary Standards.

In the case of paper which is destined for direct contact with foods or for household, medical, or personal uses, it is desirable that these products conform to bacteriological standards now being proposed.

1. Virgin Pulp. It is generally agreed that only virgin pulp from clean, sound pulp wood should be employed for food wrappers and containers. Our definition of virgin pulp is pulp that has not previously been used for commercial purposes. Trim, which is properly handled and

protected from contamination is considered as suitable primary stock. Virgin pulp only has already been specified for milk container board, drinking cups and hospital cellulose. Even if secondary pulp can be completely sterilized during recovery, its miscellaneous content of foreign matter and dirt renders it unsuitable for use in stock for perishable foods. As a matter of fact, bacteriological tests on board containing secondary stock indicate that adequate sterilization may not take place. The results reported in Table I confirm this conclusion.

2. Slime Spots. Slime due to excessive development of microorganisms in pulp and paper mill systems, is preventable. The presence of slime spots in paper indicates to sanitarians lack of sanitary care and products containing them do not conform to specifications. Identification of this condition by bacteriologists is based on recognition of growth fragments, microorganisms, or characteristic films formed by gelatinous, rubbery, or matted forms of slime growths.

3. Bacterial Counts. Through the active interest of several mills, interesting correlations are being drawn between degrees of bacteriological control and bacterial counts in finished paper. It is known that tissue products may contain less than 50 organisms per gram and approach practical sterility. The most carefully made milk container board is comparable in sanitary quality with the best grade of tissue. While it is not expected that board mills will be able to consistently maintain counts of less than 50, they are doing their best to achieve the lowest possible counts. Nearly all of them produce counts of less than 250. At the same time, it seems inadvisable to specify

TABLE I.—NUMBER OF BACTERIA IN VARIOUS GRADES OF PAPER BOARD USED IN FOOD PACKAGING

(Per gram of finished board. Agar plates incubated at 32 deg. C. for 72 hours)

Fiber cans (Containing considerable secondary stock)	Fiber cans (Containing mostly prime stock)		Milk container board						Drinking cup and food container board, Unusual sanitary precautions taken
			Before strict sanitary control		After strict sanitary control		Unusual sanitary precautions taken		
							Mill C		
Mill J	Mill B		Mill A	Mill B	Mill A	Mill B		Mill D	Mill C
16,938	2,660	1,077	318	301	163	294	35	77	62	21
18,311	3,077	973	423	446	86	175	43	7	42	73
18,165	2,715	2,542	360	450	104	318	51	0	26	65
19,802	985	1,996	597	472	119	172	84	43	96	0
19,856	1,644	2,055	205	229	138	209	177	32	22	97
15,110	2,302	2,280	232	510	187	307	67	11	44	86
26,348	2,466			444	76	167	61	21	36	22
18,000	2,904	Mill K		440	64	18	36	108	49	105
35,230	2,740		Mill E	593	63	210	44	73	43	44
33,600	789	2,174		616	65	262	55	0	54	55
23,526	1,606	2,717	425		101	107	66	55	54	102
13,479	1,560	1,788	422		69	97	55	33	11	80
15,580	3,960	2,123	435		140	92	87	21	32	49
13,487	3,562	1,783	536		216	18	129	54	75	54
12,331	4,219	1,974			198		85	44	109	108
14,292	3,617				150		64	22	49	83
	2,192				66		53	44	45	22
					89		43	11	54	28
					156		5	10	43	44
					121		0	54		33
					129		117	33		22
							77	0		11
							44	11		33
							107	33		22
							32	11		33
							22			

TABLE II.—RELATION OF VAT CONTAMINATION TO PAPER BOARD COUNTS

Vat. No.	Counts from vat stock comprising board layers: Colonies per cc. of stock	Counts per gram of finished board where relatively high vat counts prevailed.		Counts per gram of finished board where relatively low vat counts prevailed.		Counts per gram of finished board, where vat counts approached bacteria free state.
	Mill B	Mill A	Mill B	Mill A	Mill B	Mill C
1	3,600*	423	446	85	175	55
2	9,300*	597	472	104	172	33
3	19,500	360	450	97	209	21
4	23,500*	333	444	141	210	54
5	33,750	469	440	106	206	44
6	8,650*		510	170	105	22
7	8,450*		616	257		44
			593	118	107	11
			450	76	97	10
1	390		346	216	92	54
2	180			198	18	33
3	490			87		0
4	150			150		11
5	170			66		33
6	41*			89		11
7	46*			156		

more exacting standards than the count of 500 colonies
2563 per gram of disintegrated board, originally suggested for milk container board, until the effect on these counts of seasonal variations in water supplies, temperatures, and microbiological development have been determined.

The cup and container, and milk container board counts reported below show a close correlation with microbiological surveys. Bacteriological counts obtained thus far on various grades of paper are, however, only preliminary in that they do not adequately reveal the influence of changing mill conditions throughout the year. So far as the manufacture of food container board is concerned an effort is being made to achieve consistently low counts through the establishment of control programs designed to meet seasonal and operative changes. As numbers of microorganisms are suppressed in vat stock, board counts become lower. In cases where it is possible to practically sterilize this stock, the finished board is relatively free from bacteria.

* Indicates board layers which consisted of 100 per cent bleached sulphite pulp. Other layers contained some ground wood.

The types of organisms predominating in milk container board made from virgin stock are heat-resistant forms characteristic of water, soil, or dust. While these species are clearly not disease-producing types, it is desirable from the standpoint of general sanitation and cleanliness to hold their total numbers to a minimum in paper to be used with perishable foods. Failure to control adequately this contamination may be considered an evidence of careless housekeeping.

Status Raised Through Cooperation.

Through the efforts of cooperating mills, the hygienic status of food container board has been raised to a point which renders it entirely suitable for direct contact with the most perishable and carefully processed foods. We believe that this movement toward the improved sanitary condition of paper products is economically sound and conducive to wider uses and more general acceptance of paper as an entirely hygienic and safe packaging material for the food industry.

2564 **PLAINTIFF'S EXHIBIT 18.**

When Are Milk Containers and Equipment Clean and Sterile?*

The protection of milk from contamination from the time it is drawn from the cow's udder to the time it is delivered to the consumer is the most important problem connected with the production of clean, safe milk. The two most important items here involved are the pasteurization of the milk, and the sterilization of milk containers and equipment with which milk comes in contact. Considerable and, it is believed, adequate work has been done in the establishment of standards for the pasteurization of milk. However, comparatively little work has been done in the establishment of standards for the sterilization of milk containers and equipment. The committee is of the opinion

* Progress Report of the Committee on Milk Supply of the Public Health Engineering Section of the American Public Health Association and the Committee on Milk Sanitation of the Conference of State Sanitary Engineers, presented to the A.P.H.A. at the Sixty-second Annual Meeting in Indianapolis, Ind., October 9, 1933.

that there is need for additional work along these lines, and has undertaken to report upon the present status of this subject with a view of encouraging this type of work and bringing about (1) a better understanding of the subject, (2) the development of tests for determining efficiency, and (3) eventually a standardization of these methods.

Cleaning and sterilization are very frequently associated, but they are two distinct processes and should be treated as such. Efficiency of cleaning and of sterilization are matters of particular concern to health officials. The word "sterilization" as used here and as it has been used for years in dairy work means bactericidal treatment resulting in the devitalization of milk-borne pathogens and the further material reduction of all other bacteria.

It is commonly conceded that thorough cleaning is a necessary prerequisite to sterilization.

It has been, and probably will continue to be, the practice of milk control officials to determine cleanliness by physical examination. A simple visual examination is not sufficient. It is necessary to take things apart and to dig into the corners and crevices to determine whether they have been properly cleaned. Clean surfaces should not show a greasy film. The following examples will indicate the necessity for close examination. In a certain plant all readily visible parts of the equipment appeared clean but it was difficult to take the milk pump apart, indicating that the pump was not disassembled regularly. When it was taken apart it was found to be filthy. In another instance, a surface cooler was installed rather close to a wall and the visible side appeared to be very clean. However, a close examination of the surface against the wall revealed accumulation of dirt and milk solids, indicating that the surface had seldom, if ever, been washed. The man responsible for washing the equipment had apparently fooled the owner as well as the inspector.

The cleaning of the inner surfaces of pasteurizers presents a problem in itself. Many pasteurizers are coated
2565 with milk stone which is hard to remove. Wherever possible the walls of the pasteurizer should be cooled at the end of the holding period by circulating cold water through the coil or jacket to prevent a thin film of milk being exposed on a hot surface. When this is done, it is usually a simple matter to keep a pasteurizer clean by rinsing it thoroughly with cold water and washing it with ordinary washing powders. It is fairly certain that sur-

faces which cannot be easily cleaned will not always be properly cleaned. Every effort should be made to see that equipment is so constructed, located, and operated as to make cleaning simple and easy.

The determination of the efficiency of sterilization presents a more difficult problem, as it is necessary to go beyond an ordinary physical examination of the sterilized surfaces. Heat treatment by steam, hot water, or moist hot air has been the most common means of sterilization in commercial use. Chemical treatment by solution containing chlorine is now used quite commonly. It has been fairly well established that the exposure of surfaces to certain degrees of heat for certain periods of time will accomplish sterilization, and also that exposure to certain concentrations of certain chemical for definite periods of time will also give satisfactory results. Attempts have been made with more or less success to determine the efficiency of sterilization by taking temperatures, by observing the length of time of application of such temperatures, and by testing the strength of chemical solutions and noting the time of application. The results have not been entirely satisfactory and it has not been easy to convince plant operators that these requirements must be met in order to get results.

More recently a more definite method of determining efficiency of sterilization has been brought into use. The supposedly sterilized container or piece of equipment is rinsed with an aliquot portion of sterilized water and standard plate counts are made to give an approximation of the number of colony-producing bacteria rinsed from the container or piece of equipment. This method has been used in a number of places and has made it easier to convince plant owners that they are not securing sterilization when they are confronted with unsatisfactory results of tests of this kind. As an illustration of the type of information that can be obtained, the following results of a series of tests made by a state health department are submitted. These results include the examination of bottles and cans from 526 plants in 179 municipalities during a period of about 2 years. Of 1,820 bottles examined 412, or 22.6 per cent, gave counts in excess of 10 per milliliter of capacity and 784, or 43.1 per cent, gave counts in excess of 1 per ml. Of 1,193 milk cans examined 527, or 44.2 per cent, gave counts in excess of 10 per ml. of capacity of such cans and

744, or 62.3 per cent, gave counts in excess of 1 per ml. capacity.

The International Association of Milk Dealers describes a method of this kind on pages 72 and 73 of its Laboratory Manual. It is understood that it is proposed to include this method in the next revision of Standard Methods of Milk Analysis. The standard adopted by the Milk Dealers Association for the satisfactory sterilization of bottles is that they shall give counts of not more than 2 colonies per c.c. capacity and for cans and covers not more than 100,000 colonies per 10-gal. can. The standards adopted by some health departments are more rigid. A standard adopted by one department provides for not more than 1 colony per ml. capacity of the containers, whether bottle or can.

The results given above indicate that 56.9 per cent
2566 of the bottles examined and 37.7 per cent of the cans examined complied with the latter standard. This would indicate that the standard is a reasonable one, inasmuch as the results given have been reported as a first attempt to check the efficiency of sterilization by this method in these plants. It is reasonable to expect that a re-survey would indicate a higher percentage compliance.

The committee is inclined to believe that the question as to whether this or any other standard of sterilization is too rigid or perhaps not rigid enough has not been answered satisfactorily and that the problem should be studied fundamentally.

Conclusions And Recommendations

It appears from the studies that:

1. At the present time the best method available for determining the efficiency of cleaning is a physical examination of the surfaces cleaned which should be made while the equipment is completely dismantled.

2. The most satisfactory way now available to determine the efficiency of sterilization is by rinsing the sterilized surfaces with sterile water and examining this water for bacteria by the Standard Plate Method.

3. In view of the possible inadequacy of present standards based on this method the committees recommend that intensive research work upon the problem be conducted in order that definite and practicable standards may be estab-

lished for the sterilization of milk containers and equipment.

Committee on Milk Supply,
American Public Health
Association

Committee on Milk Sanitation
Conference of State Sanitary Engineers

C. A. Holmquist, Chairman

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2567 PLAINTIFF'S EXHIBIT NO. 19.

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Second Conference on Sanitation of Paper Milk Containers Reported by Dr. R. S. Breed, Chairman, With a Supplementary Note on Sanitary Inspection and Control at Pulp Paper Mills.

New York Agricultural Experiment Station
Geneva, New York, May 2, 1938.

As a result of rapid and interesting developments in the use of paper milk containers during the past year, it was considered advisable to hold a second conference to discuss problems of sanitation involved in the manufacture and use of single service paper containers for milk and cream. This meeting took place on May 2nd, 1938, at the New York Agricultural Experiment Station, Geneva, New York. A report of progress made during the year was given by Dr. J. R. Sanborn of the Geneva Experiment Station. Statements pertaining to various aspects of the work were made by Dr. John W. Rice of Bucknell University who is to be associated during the summer months with Dr. Sanborn in research work at the Geneva Station, Mr. J. C. Marquardt

* A member of the committee until he resigned as Chief Public Health Engineer of the State Board of Health of Missouri on May 10, 1933.

of the Geneva Station, Dr. F. W. Tanner of the University of Illinois, Urbana, Illinois, Mr. S. Abraham in charge of milk inspection work for New York City and Mr. W. D. Tiedeman, Chief of the Bureau of Sanitation of the New York State Department of Health.

About one hundred persons attended the conference, representing the following manufacturers of paper containers, American Can Company, Bensel Corporation, Dixie-Vortex Company, Ex-Cell-O Corporation, the Lily-Tulip Cup Corporation, Mono Service Company, the Reed Container Company and the Sealright Company; also manufacturers of paper board used in making these containers; makers of milk bottle caps, paper cups, secretaries of interested paper, pulp and container associations, milk dealers using paper containers, dairy machinery manufacturers, and representatives from federal, state and municipal health groups. The purpose of the conference was to encourage a free discussion between responsible health authorities and representatives of the industry, in order that both satisfactory and unsatisfactory practices in the handling and use of containers of this type would be revealed, and that plans could be made for correcting any undesirable conditions that have developed during the rapid introduction of these containers, particularly in the metropolitan area of New York City.

Health authorities were requested to state clearly what precautions they felt should be taken in the manufacture and use of containers of this type. Dr. Sanborn reported that through the development of a disintegration technic, he had been able to make between 500 and 1,000 bacteriological analyses of samples of paper board, the histories of which were known. All mills manufacturing board for milk containers use virgin mechanical or chemical pulp. Processes of manufacture when this work started were found to yield a board which gave an average bacterial count of less than 500 colonies per gram of disintegrated paper. In following the production of six mills in a routine way during the period from May 1937 to April 1938, it was found that two of the mills were able to keep nearly all counts under 100 colonies per gram, and samples were often practically bacteria free. There is some indication that board made during the spring and fall may show higher counts due to the fact that control of microorganisms in water supplies and in mill systems may be less effective then than at other times in the year. However,

these data are not yet sufficient to reveal what can be accomplished when the various mills give attention to the matter of producing consistently a low count paper board. Dr. Sanborn stated that some mills are not in a position to guarantee a paper board that will regularly yield bacteriological counts of less than 500 per gram.

The persons present at the May second conference appreciated the desirability of holding to a minimum all human contact with paper and containers until the finished container filled with milk reaches the consumer. Various reports indicated that definite progress is being made along these lines. It was evident that manufacturers realize the importance of handling the paper, paper blanks, and finished containers as aseptically as possible. They also realize the value of packing pre-fabricated containers in such a way that the milk dealer who receives them will regard the containers as sterilized packages. Careless handling and misuse of paper blanks and fabricated containers in milk bottling plants were reported by the health authorities present. Suggestions were made pertaining to the sterilization of containers just before filling with milk. The use of toxic substances of any sort in the paper, moisture-proofing materials, adhesives, or other materials used in the manufacture of the container could not be allowed under any circumstances.

The conference again brought out differences in viewpoint among public health authorities as to methods of achieving the highest possible sanitary quality in both prefabricated containers and those that are filled with milk immediately after paraffining. There are so many mechanical and sanitary difficulties involved in providing sterile containers in milk plants that health authorities are requiring that more careful attention be paid to sanitary conditions involving the storage, handling, and filling of containers in the average milk plant.

As a result of suggestions that have been received during the year, mimeographed sheets were prepared suggesting amendments to the Principles of Sanitation which were drawn up at the previous conference held on July 12, 1937.[1] Preliminary drafts of a model ordinance for cities were distributed for discussion.

Those interested may secure copies of the various publications and mimeographed sheets that were available at

1. Report of Proceedings published in The Milk Sanitarians, 6, No. 9, September 1937.

the meeting, on application to the Geneva Experiment Station.

Supplementary Note on Sanitary Inspection and Control at Pulp and Paper Mills.

In response to a general request from health groups represented at the second conference on paper milk containers that some sort of an official inspection be established of mills making board for food containers, the technical directors from a number of interested mills met at the New York State Agricultural Experiment Station on May 16, 1938, to consider a program for meeting sanitary requirements. The paper manufacturers present re-
2568 quested sanitary inspection of their mills and authorized Dr. R. S. Breed and Dr. J. R. Sanborn to organize and conduct a preliminary program of inspection and control. A group of about a dozen mills have requested that Dr. Sanborn undertake a preliminary inspection to determine how adequately they are prepared to meet the type of regulation that was suggested at the conference of May 2, 1938. The suggestions covered general sanitation at these pulp and paper mills, including control measures that would keep persons suffering from contagious diseases from contact with paper-making operations; proper purification of water supplies; and handling of pulp and paper so as to maintain low bacterial counts in the pulp before it reaches the drier rolls and in the finished product.

The purpose of these preliminuary inspections is to insure the production of paper that is sufficiently bacteria-free and clean to meet the rigid requirements necessary for the packaging of perishable foods. These procedures, incidentally, are also helpful in general mill operation and production. Inspections are based upon a guide for a systematic sanitary survey, tentatively approved by the pulp and paper and public health groups.

In several cases, the present summer inspection will follow up previous inspections made last year. Through the cooperation of mills that have had the opportunity to make improvements and corrections, it has been possible for this Station to secure complete records of the sanitary condition of milk container board production. Satisfactory bacteriological analysis of many samples of board has been made possible through the development at this Station of

a distintegration method previously described.[2] The technic for determining the bacterial content of container board consists of repulping the board in sterile water by means of a sterilized beating device (Fig. 1) and plating the resulting pulp suspension according to standard bacteriological procedures. Various cooperating laboratories are investigating the bacteriological contamination of paper board, using disintegration procedures. The results obtained are showing interesting correlations and considerable agreement.

Figure 1—Apparatus for Paper Board Disintegration

The entire procedure of paper disintegration for bacteriological examination is undergoing intensive investigation and standardization, so that conditions of sample collection and testing may be uniform at all laboratories. In disintegration processes, we are working toward the utilization of stainless steel equipment throughout. For example, in the case of the method previously described, sterile stainless steel covers for stainless steel churning jars have replaced the sterile, single service, paper board covers originally employed.

Pulp and paper mills are deriving considerable benefit from a knowledge of the bacterial content of various runs of board. This information enables a mill to meet sanitary requirements and to employ control measures effectively. Paper container manufacturers and public health laboratories are also finding disintegration methods useful in determining quality.

Paper Containers for Milk

Principles of Sanitation to be Observed in Their Manufacture and Use.*

Item I.

Paper Container Stock.

Containers shall be made from virgin chemical or mechanical pulp. Virgin pulp is pulp that has not previously been used for commercial purposes. Board prior to moisture-roofing shall not at any time have a count exceeding 500 colonies per gram of disintegrated board.**

Unless used immediately after manufacture, container board shall be wrapped, sealed and protected until used. When used, the outside sheet on rolls or the top and bottom sheets of sheeted stock shall be discarded in all cases.

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* As revised at a Conference held at Geneva, N. Y., May 2, 1938. Originally prepared by J. R. Sanborn, M. W. Yale and R. S. Breed.

** Further research has shown that this is a feasible and rather lenient standard. Certainly, board should not give a count of more than 100 colonies per gram where milk or milk products come in direct contact with uncoated papers.

Public Health Reasons.

(a) The use of stock which has previously been used for commercial purposes (secondary stock, is not consistent with standards of food quality. Even if secondary pulp is completely sterilized during recovery, its miscellaneous content of foreign matter and dirt render it unsuitable for use in milk container stock.

(b) Contamination of rolls of paper, or sheeted stock occurs most readily at ends or on top or bottom sheets, hence the advisability of complete wrapping protection and sealing of these rolls or packs. Discarding the outside sheets of rolls or top and bottom sheets of sheeted stock, is a desirable precaution.

Satisfactory Compliance: For the above reasons, this item shall be deemed to have been satisfied when:

(a) Mills produce container board from virgin pulps.

(b) Mills require personal cleanliness among operators and consistently practice plant sanitation for the purpose of producing board low in dirt count and free from slime spots.

(c) Rolls or sheeted stock are wrapped immediately after manufacture in strong, clean wrappers, or utilized before there is opportunity for contamination from dust, dirt, or handling.

Item 2.

Process of Conversion—Where Stock Is Made Directly Into Containers.

When container board reaches conversion plant, it shall be considered that this paper has received a bactericidal treatment. All stock and containers shall be handled
2569 mechanically so far as possible. Following fabrication, until final sealing in milk plant, container surfaces with which milk or milk products come in contact shall be protected from contamination. This shall be done through the use of mechanical equipment, careful handling, sealed sanitary shipping cases, or a closure for each container.

Public Health Reasons: Human handling of container board increases opportunity for contamination which is reflected in the numbers and types of microorganisms pres-

ent in waxed containers. If stock in conversion and milk plants is not protected from contamination, the value of germicidal treatment and sanitary precautions at pulp and paper mills will be partly or entirely nullified. Moisture-proof treatment may not completely sterilize containers. The chief purpose of the latter treatment is to render containers uniformly non-absorbent. Fortunately the same process may act as a secondary line of defense against contamination with microorganisms.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Paper direct from pulp and paper mill is unwrapped in conversion plant close to mechanically-fed machine and sheets exposed to unavoidable manual contact are discarded.

(b) Entire conversion process, methods of packing and shipping are conducted in such manner as to protect container from contamination, particularly human contact contamination.

Item 3

Process of Conversion Where Container is Preformed in a Collapsed or Nested State Before Final Sealing

Throughout the processes of printing, folding, sealing, adhesive application, or packing prior to shipment to milk plant, all stock and containers shall, as far as feasible, be handled mechanically and be suitably wrapped or packaged before shipping.

Packaged container stock at milk plant shall be kept in a clean, dry place and opened only for immediate use. Where it is necessary to form or manipulate containers, all surfaces with which milk or milk products may come in contact, shall be protected from human handling.

Public Health Reasons: It is important that, during intermediate stages in conversion processes, manual contacts with container board be reduced to a minimum. In order to guard against promiscuous handling and exposure to dirt, it is advisable to keep board not in actual use, packaged and sealed. Fabrication, printing and sealing of containers should be conducted in such manner as to protect them from contamination.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Plants for printing, folding, sealing, and packing containers or other operations prior to delivery to milk plants, handle container board mechanically so far as possible and, at the conclusion of the operations, package the stock in suitable wrappers, cartons, or tubes.

(b) Milk plants protect packaged containers and contents from injury or abuse and complete fabrication, filling, and sealing of containers in such manner as to protect them from contamination.

Item 4

Moisture-Proofing

Moisture-proofing of containers shall be accomplished by means of fully refined paraffin wax or other suitable materials which are odorless, tasteless and non-toxic. The operation of paraffining machines shall be supervised by competent persons.

Public Health Reasons: Fully refined paraffin is the only grade acceptable to and consistent with food uses. It is of fundamental importance that containers be rendered completely non-absorbent by machines that operate properly and that the moisture-proofing material be odorless, tasteless and non-poisonous.

Satisfactory compliance. This item shall be deemed to have been satisfied if the purpose and quality of the treatment described above are strictly maintained.

Item 5

Adhesives

Container board should be sealed by means of non-fermentable adhesives, preferably synthetic thermoplastic materials. Adhesives having starchy or casein bases must resist decomposition, dissolution, and leaching, and not contaminate the contents of containers with microorganisms.

Public Health Reasons: Adhesives are as a class notoriously susceptible to decomposition by microor-

ganisms. Some of these highly perishable materials, such as animal glue, are obviously not suitable for use in food containers. A number of adhesives, represented by products employing starchy or casein bases, while ordinarily fermentable, may be produced in forms or grades which are non-odorous, resistant to moisture, and unsuitable for the development of microorganisms.

Satisfactory Compliance: In accord with the above account, this item shall be deemed to have been satisfied if:

(a) Rapidly drying adhesives having starchy or casein bases which resist fermentation are used to form liquid-tight joints; these adhesives do not contaminate containers with microorganisms.

(b) Adhesives employed be of synthetic thermoplastic types.

Item 6

Germicides

Germicidal and bacteriostatic agents that are toxic to human beings or that affect milk in any way, as in taste, odor or nutritional qualities shall not be used in board, adhesives, or moisture-proofing materials for milk containers.

Public Health Reasons: Substances introduced into materials of which containers are composed, which might conceivably exert preservative or antiseptic effects may affect the nutritional value of milk and be instrumental in producing off-flavors or odors. In some cases injurious effects on human beings from the use of such antiseptics have been demonstrated. It is necessary that substances of this class for use with containers be free of any toxic associations.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) No germicidal or bacteriostatic agents are used unless they have been shown to be non-toxic and without effect on milk through the use of physical, chemical and biological tests, supported by clinical evidence.

Item 7

Handling of Paraffin

Paraffin in the solid state shall be shipped and stored in cool, clean, dry places, protected from dirt and isolated from odorous materials. Paraffin in the liquid state shall be kept, at all times, in clean and sanitary containers. Waxing machines and baths shall be cleaned at regular intervals unless cleaning devices such as continuous filtration, are employed. In no case shall freshly prepared, new paraffin be introduced into used paraffin which has become discolored, oxidized or dirty. Odorous substances such as ordinary kerosene and gasoline shall not be used on or about conversion machines.

Public Helath Reasons: Paraffin absorbs odors and for the sake of milk quality it is advisable that special storage facilities be provided, which will also protect wax from promiscuous handling and exposure to dirt.

Due to the susceptibility of heated paraffin to oxidation, a well-regulated program of paraffin utilization should be followed to avoid over-heating, prevent contamination of new paraffin with partly oxidized wax and to eliminate the possibility of coating or impregnation of containers with discolored, dirty or oxidized wax.

Satisfactory Compliance: This item shall be deemed to have been satisfied if:

(a) Slabs of paraffin are shipped and stored in clean, cool, dry places and removed from storage only as required for coating or impregnation bath.

(b) Paraffin for coating, impregnation or storage is held at temperatures and for periods of time which will not impart flavors or odors to paraffin or milk.

(c) Molten paraffin is held in clean sanitary containers.

(d) Paraffin bath or tank is cleaned by continuous filtration or at regular intervals depending on such evidences of deterioration as discoloration and presence of dirt or fiber.

(e) The possibility of mixing new paraffin with a product that is unfit for use is avoided.

Item 8

Shipping Cases and Storage for Containers*

Cases for shipping empty containers shall be constructed of board or wrapping designed to adequately protect containers from injury or abuse due to tearing or breaking. Containers shall be stored in sealed, dry, unbroken cases, in a dry, vermin-proof location. Partly empty ship-
2570 ping cases of prefabricated containers shall be re-sealed, rewrapped, or otherwise protected from contamination during storage. Except during filling operations, empty containers shall not be exposed at any time.

Public Health Reasons: Damage to shipping cases frequently exposes containers to conditions which may result in serious contamination from dirt, wetting and human contact.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) Shipping cases are well enough constructed and sealed to resist the handling they receive in transit without injury.

(b) Containers are stored at all times in sealed cases in places having dry floors and where there is no washing down of the floors while cartons are in storage.

Item 9

Cartons for Shipping Filled Containers

Only clean cartons shall be used for shipping filled containers. Returned carriers shall be handled or stored so as not to become wet, dirty, or damaged before again being used.

Public Health Reasons: The re-use of shipping cartons may easily become a menace to milk quality and health. The abuse of these boxes arises from lack of care in handling and storing returned cartons. They may be carelessly thrown aside, allowed to become wet, dirty and mildewed. The packing of new containers of fresh milk

*Regulations governing construction of milk plants so as to limit the operations of opening shipping cases, storing, and filling the containers to definite rooms, should be adopted where feasible.

in abused cartons is a practice which should not be allowed as it may cause addition of organisms and dirt.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) New paper cartons are used for single delivery to retailer.

(b) Milk plant has adequate and dry storage facilities for returned cartons and uses only neat and clean, uninjured boxes.

Item 10

Examination of Containers

By any method of manufacture, treatment, or handling employed, the final test of sterility and cleanliness shall be freedom from bacteria, chemical reagents, and other foreign matter.

Public Health Reasons: Consideration of possible sources of contamination during container manufacture, renders it advisable to reduce to a minimum the number of organisms present. While the likelihood of contamination by disease organisms is slight, bacteriological control of plant sanitation is necessary.

Satisfactory Compliance: This item shall be deemed to have been satisfied when:

(a) The average bacterial content of containers does not exceed 50 colonies per container.

Item 11

Quarantined Residences

The delivery of milk or milk products to and the collection of milk and milk-products containers from quarantined residences shall be subject to the special requirements of the health officer. It is recommended and urged that single service containers be used for retail delivery of milk and milk products under these circumstances. In case of wholesale delivery, to hospitals, etc., caring for infectious diseases carrier cartons as well as individual containers should be destroyed.

Sanitation of Paper Containers and Fibre Products

One of the weak links in the sanitary handling of dairy products has been the condition of bottle caps, cover hoods, milk containers, and cartons for ice cream, butter, and cheese. Some of these come into immediate contact with the food product, and others purport to protect it from contamination. In spite of the great care and expense involved in securing milk from healthy cows, and in pasteurizing it under scientific control by operators free from communicable disease, it has been common practice to use milk caps of uncertain sanitary history, to say the least. Pouring lips of glass milk bottles are protected by paper devices of one kind or another whose sanitary history is nondescript. The same considerations obtain in the increasing use of fibre containers for ice cream, both retail and wholesale.

It is common knowledge that paper and other fibre products have not been manufactured under such excellent sanitary conditions as usually obtain in food handling operations. Direct contact of high quality dairy products with containers of high, low, and indifferent degrees of cleanliness is as incongruous as the hand capping of milk bottles or the dispensing of ice cream under the faulty conditions of sanitation which obtains at many fountains. The effects of expensive and careful processing are weakened or possibly nullified by such practices.

These conditions are being studied and remedies devised by the extensive researches now being conducted at the New York State Agricultural Experiment Station at Geneva. Methods have been reported for determining the bacterial content of fibre products. Sanitary standards are being developed to guide the operations of the mills. Suggested regulations have been drawn up and offered as a tentative control procedure to protect the public and the industry from hasty and ill-considered official regulatory measures. An educational program has been inaugurated to demonstrate to the mills what constitutes sanitation according to the standards of public health officials and of the dairy industry. Pulp and paper mills are being inspected and rated for sanitary conditions and methods. A list of those having approved ratings will be published later when all have had an opportunity to make necessary improvements and corrections. This is a valuable contribution to dairy technology and sanitation.

Some mills are now producing high quality products. Their operations are open for sanitary inspection. Others are not operating on this basis. Why are they not? One answer is not new; they have a market for their products which are being produced as heretofore, and as yet are not prepared to go to the expense necessary to make their operations comply with the modern conceptions of sanitation. In some cases, they have not realized that conditions which may be satisfactory for routine paper production will not always meet sanitary standards which must be maintained for food and dairy containers.

The health officer, the conscientious dealer, and the consuming public have a right to know what makes of paper wrappers and containers, commensurate in sanitary quality to milk and ice cream, are available. Obviously, reliance cannot be placed on the claims of salesmen. Inspection by an impartial agency, which is authorized to certify to compliance, and to publish the names of such brands, would meet the need. Firms which are now producing high quality products should be known by this fact, and not be made to wait for some indefinite time in the future when the laggards can be listed at the same time as the pioneers.

J. H. S.

Plaintiff's Exhibit No. 20 omitted at this point as it appears as a part of Plaintiff's Exhibit No. 4.

2575 PLAINTIFF'S EXHIBIT NO. 21.

Proposed Standards for Paper Milk Containers.

J. R. Sanborn
New York Agricultural Experiment Station,

Geneva, New York.

Sanitary Requirements of Food Container Board.

There is no reason why a paper container made from clean, sound, pulp wood according to methods consistent with food standards should not be hygienically suitable for perishable foods. Investigation has demonstrated the feasibility and effectiveness of this means of packaging milk.

Commercial mill practices in manufacturing pulp and paper and the condition of finished products are often not sufficiently sanitary to meet with the approval of food sanitarians and public health officials. The paper maker needs a sanitary technique comparable to the procedures employed for edible products. The intimate associations of cellulose material with food and household uses admit of no compromise with cleanliness and microbiological control.

Fear of increased operative costs and hesitancy to make changes from long established practices intensify the opposition to improved sanitary methods on the part of some pulp and paper mills. On the other hand, several producers of food wrappers and container board already exercise effective sanitary control which enables them to manufacture a clean, high quality product practically free from microorganisms. By insuring purity of process water, cleanliness of mill systems and operations, and adequate protection of the finished product, these plants are setting a standard of quality which indicates the suitability
2576 and safety of properly made paper for the packaging of perishable and easily contaminated food products such as milk.

Consistently high standards of quality in paper mill operations and possible approval by public health officials will depend on constant adherence to a program of microbiological control. The industry has suggested that sanitary inspections be made of plants manufacturing milk container board. Apparently the only way this can be done is by federal supervision or voluntary action on the part of pulp and paper mills or conversion plants. Many purchasers and consumers of paper food containers are sensitive to the bacterial counts of contained foods and to the presence of undesirable organisms. With all the cleanliness and care used in preparing and processing foods, it is obviously inconsistent to package these foods in unsuitable and contaminated paper.

Sanitary Quality of Paper Milk Containers.

An institute has been established at the New York State Agricultural Experiment Station for the purpose of securing fundamental information on the sanitary condition of paper for use in contact with such perishable foods as milk

and milk products, and establishing standards for this paper and its fabricated forms which will provide health laboratories with criteria for estimating sanitary quality in paper containers.

During this investigation consideration has been given to certain principles of sanitation which should be observed in the manufacture and use of paper milk containers. The following items present in concise form some of the factors involved:

1. Use of virgin pulp only.
2577 2. Pure process water and strict microbiological control at pulp and paper mills.
3. Suitable protection and wrapping of finished board.
4. Mechanical handling of board and containers at conversion factories and milk plants.
5. Protection of board, adhesives, moisture-proofing materials, and finished containers from careless exposure to human contact, contamination, dirt, flushing water, or insects.
6. Detailed knowledge and careful selection of all materials composing the container to avoid the possibility of incorporating substances having germicidal or bacteriostatic effects, the use of which is prohibited unless they have been shown to be nontoxic to human beings and without effect on milk.

The bacteriological condition of the original container board usually influences directly the bacterial counts of finished containers. Strictly sanitary methods of handling, conveying, and storing good quality board aid in preserving its sanitary condition. Health laboratories are therefore primarily interested in the hygienic state of the original container board as it is received by conversion factories or milk plants.

Municipal Regulations and Control.

Critical examination of food wrapper and container board will reveal information relative to the care and sanitary precautions taken by pulp and paper mills in the manufacture of these important grades of paper. Health laboratories may confirm by identification of fibers the nature of the pulp used; calculate the dirt content according to a method of numerical estimation suggested by the pulp

Testing Committee of the Technical Association of the Pulp and Paper Industry; examine slime spots for
2578 evidences of slime-forming organisms, growth fragments, or characteristic products of slime production.

Appreciable quantities of dirt and foreign matter may be introduced into new paper and board during their manufacture. Particles of metal, pipe scale, sand, and carbonaceous matter sometimes occur as well as various foreign fibers and organic residues, the presence of which is occasionally associated with unhygienic or careless practices.

Accumulations of microbial growth or slimes in pipe lines, chests and tanks are frequently dislodged and carried along by pulp streams to paper machines where considerable operative difficulties may result. Slimes are caused by bacteria, filamentous fungi, or yeastlike organisms, representative species falling under the genera Aerobacter, Achromobacter, Flavobacterium, Pseudomonas, Bacillus, Penicillium, Mucor, Aspergillus, Cladosporium, Trichoderma, Oidium, Monilia. The presence of slime spots in samples of paper suggests inadequate control over the development of micro-organisms in pulp and paper mills. Many slime-forming species are unusually aggressive and persistent, controllable only by specific remedial measures and consistent application of programs of slime eradication and prevention. Only those mills which successfully control micro-organisms within their systems should be considered by health officials for an approved sanitary status in the manufacture of food wrappers and containers.

It is also possible to grade paper products such as milk container board according to their bacterial content based on the number of colonies developing on standard agar per gram of disintegrated stock. Disintegration of con-
2579 tainer board may be accomplished aseptically by means of special beaters, shredders, grinders, or agitators. When properly carried out the process is completed in a relatively short time. Ten cc. portions of the pulp suspensions containing ten grams of board to a liter of sterile water, are plated out on standard agar in both 100 mm. and 150 mm. petri dishes. In the case of the regular size plates, 2 cc. amounts of suspension are introduced into each dish, thereby facilitating the counting of colonies from board containing relatively large numbers of organisms. The large size plates, accommodating the entire 10 cc. portion of pulp suspension, furnish the more useful

method for the examination of improved milk container stock.

Samples of container board taken at any state prior to moisture-proofing should not have a count exceeding 500 colonies per gram of disintegrated board. Certain pulp and paper mills which are able to maintain effective control over the development of micro-organisms within their systems, manufacture a product having counts of less than 100 per gram. Ten cc. rinses of paraffined containers made from low count board are often practically free from bacteria. On the other hand, containers produced from board which approaches the maximum count of 500 may yield 100 colonies per container. Average plate counts for all types of paper milk containers are usually less than 50 per container, which is standard for the Baltimore regulation discussed below.

Rinse tests on fabricated containers are made in conformity with the latest standard methods recommended by the American Public Health Association. Paper con-
2580 tainers are rinsed with 10 cc. of sterile water all of which is plated out on standard agar, by distributing the rinse among three regular size plates or introducing the entire quantity into a 150 mm. dish. Plates are incubated at 37° C., and counts are made at the end of 48 and 72 hours. It may be considered that present standards for paper containers should be in accord with those suggested by the American Public Health Association for glass bottles. Sanitary conditions in pulp and paper mills, container manufacturing plants and dairies usually enable paper containers to meet a much stricter standard than those ordinarily considered for glass.

Isolated attempts are being made by control officials to regulate the handling and sale of milk and milk products packaged in paper. While these actions are based on information available at the time of formulation, recent findings indicate that the data are usually inadequate. The regulation adopted by the Baltimore City Health Department is deserving of serious study. In accord with this regulation it will be generally agreed that all paper, cardboard or other non-glass containers should be approved by the Commissioner of Health and conform to certain general rules regarding labelling and designation. Item 4 of the more technical portion of the regulation states:

"The paper blanks or non-paraffined containers shall be

received by the milk plant in tightly closed packages or cartons and shall be manufactured from the best obtainable white spruce pulp or other material approved by the Commissioner of Health."

In the light of the results of recent investigations, this item may be effectively amended according to the suggestion given below:

"Container board in rolls, sheeted stock or blanks shall be received by conversion or milk plants suitably
2581 wrapped and sealed, and shall, until used, be kept unopened, in a clean, dry place."

"Only virgin pulp shall be used in manufacturing milk container board, which is low in dirt count, free from slime spots and has a bacterial count which does not, at any time, exceed 500 colonies per gram of disintegrated board."

Item 5 of the Baltimore regulations makes the following statement:

"The container, if glued, shall be glued with material made from a base of soybean, tapioca, or other produced approved by the Commissioner of Health."

The suggested revision of this item would be as follows:

"The gluing of the container shall be accomplished with non-fermentable adhesives of synthetic, thermoplastic, varieties, or such types having vegetable or casein bases as produce rapidly-drying films which resist dissolution, decomposition and leaching."

Item 6 of the Baltimore ruling is as follows:

"The container, if it be one which requires paraffining, shall be paraffined in the milk plant where it is filled with milk or milk products; and shall be mechanically conveyed from the paraffining apparatus to the filling and sealing equipment; and the paraffining, conveying, filling and sealing of all containers shall be so accomplished as to prevent any possible hand or other contamination."

In view of the fact that paraffining may not completely sterilize containers and that premade containers may be as effectively protected from contamination as those that are filled with the milk immediately after paraffining, both types of containers should be permitted. The condition of paper milk containers in actual use at milk plants is the most reliable index to their sanitary quality. Wording
2582 such as the following might be substituted.

"Moisture-proofing of containers shall be accomplished by means of fully refined paraffin wax or other

suitable materials which are odorless, tasteless, and non-toxic. The operation of paraffining machines shall be supervised by competent mechanics.

"All stock and containers shall be handled mechanically so far as possible and be paraffined, conveyed, filled and sealed so as to prevent contamination from manual contact, dirt, and insects."

This form of amended regulation would seem to provide sufficient restriction and sanitary control without shutting out high quality containers which may reach milk plants already paraffined. It has been demonstrated that it is entirely possible to make paper wrappers and containers which are suitable for milk and other perishable foods. As manufacturers continue to progress in sanitary methods of production and handling, it is probable that standards and specifications will become more stringent.

2583 PLAINTIFF'S EXHIBIT NO. 22.

Sanitary Problems in Connection With Paper Containers for Milk.

J. R. Sanborn,
New York Agricultural Experiment Station,
Geneva, New York.

Recent Developments in the Single-Service Paper Container.

Paper wrappers and containers used in direct contact with perishable foods are undergoing critical sanitary investigation. Various research groups have long been appreciative of the need for the establishment of sanitary standards for paper packaging materials. The coming of the paper container for milk provided the impetus necessary to bring about fundamental improvements in the sanitary quality of container board. With the cooperation of pulp and paper mills, conversion factories and milk plants, a sanitary technique has been adopted which has already resulted in significant improvements in the hygienic condition of food paper containers.

While developments in the paper milk container industry during the past two years have been phenomenal, its history in this country goes back many years. In-

vestigations reveal the extensive background of experience and research on which manufacturers are able to base advances in paper container engineering and sanitation.

New York City has known this container for approximately ten years. Since 1933 the amount of milk sold in paper containers has steadily increased. Besides the cities of the New York area and New Jersey, paper containers for milk are being used in Philadelphia, Pa., Baltimore, Md., Cleveland, Ohio, Detroit, Mich., St.
2584 Louis, Mo., Seattle, Wash., Los Angeles, Cal., Toledo, Ohio, Atlanta, Ga., Dayton, Ohio, Santa Barbara, Cal., San Francisco, Cal., Pittsburgh, Pa., Phoenix, Ariz., Wichita, Kansas, Omaha, Nebraska, and Dallas, Texas.

Last Spring the Department of Health in New York City reported that about one-fourth of the packaged milk and cream supply of that City was furnished in paper. A single milk plant, which last March turned out 160,000 to 180,000 paper packages of milk daily had increased its output in June to over 250,000 packages. Plants that have used both paper containers and glass bottles state that there is every indication that milk packaged in paper is, in all respects, the equal of glass bottled milk.

Public health agencies are availing themselves more and more of the benefits which may be derived from the use of single service containers. In cases of infectious disease, delivery of milk in paper containers is an important factor in control. There are indications that this means of distributing milk may decrease incidence of contagious disease during epidemics. The use of single service containers for milk by quarantined residences, hospitals, and other institutions caring for infectious diseases, is recommended and urged.

The possibilities for greater sanitary usefulness of paper packaging for milk and other perishable foods are receiving the detailed consideration of public health authorities. Several pulp and paper mills are endeavoring to meet certain prescribed sanitary requirements and to achieve as closely as possible a bacteria-free board for milk containers. Their success in the attainment of this goal will depend upon the application of a program
2585 of strict microbiological control based on the utilization of pure process water, specific bactericidal treatments, practical mill sanitation, and proper protec-

tion of finished paper. Following these procedures, some mills are manufacturing, with reasonable consistency, milk container board which yields low bacterial counts. Other plants, engaged in solving specific problems are making definite progress toward effective microbiological control.

Tentative and Proposed Standards for Regulation and Control.

In view of the fact that the sanitary condition of paper board is of fundamental importance in the manufacture of sanitary containers, definite specifications are being worked out for milk container board. It is essential that only virgin pulp from clean, sound wood be employed. Under careful conditions of manufacture, board may be produced which contains considerably less than 500 colonies per gram of disintegrated stock. This count has been suggested as a reasonable maximum and until the effects on board counts of seasonal variations in water supplies, temperatures and microbiological development have been determined, we feel it to be inadvisable to specify a more exacting standard. Meanwhile, mills producing this board are doing their utmost to maintain the lowest possible counts. Several of them are making board which yields consistently less than 250 colonies per gram. In a few cases, where unusually careful attention is paid to microbiological control, counts may be periodically less than 100, even approaching the bacteria-free state. The results shown below indicate the trend of the board investigation at four represenative mills.

2586 TABLE I.—SUMMARY OF RESULTS ON BOARD TESTS.

Tests	Mill A	Mill B	Mill C	Mill D
Number of Tests	24	25	49	28
Number Counts under 100	8	3	34	20
Number Counts under 200	17	7	45	24
Counts under 250 in Per cent	83	40	96	94

A detailed study is also being made of the type if micro-organisms found in milk container board. The predominating species are typically heat-resistant, including spore-forming bacteria, micrococci, actinomyces, and various groups of fungi. The origin and characteristics of

these species are worth consideration in their relation to the quality of the milk that is to be placed in the containers.

The action of heat resistant organisms on milk is well known, and in view of the fact, however, that bacteria normally found in milk tend to outgrow nearly all of the paper container types, casual contamination from the container does not appear to be significant.

It has been conclusively demonstrated that low count board, properly handled produces containers having low bacterial counts. Thus far there have been considerable variations in board counts and in results of rinse tests made from fabricated containers. On the other hand, while occasional rinses may reveal high numbers, the average of many tests shows that all of the generally used types of paper milk containers yield counts of less than 50 per container. These figures are, of course, much less than those suggested by the American Public
2587 Health Association in the Standard Methods of Milk Analysis report for glass bottles. Low rinse counts on paper containers known to be made from sanitary board, are indicative of the bacteriological condition of containers. Without intimate knowledge and control of boards used, results of rinse tests may be inconsistent and misleading. Recent findings indicate that there is now far less variation in board counts among mills exercising careful microbiological control than occurred prior to the adoption of the present program.

As far as moisture-proofing treatments are concerned, these procedures may not completely sterilize containers. Their chief purpose is to render paper containers uniformly non-absorbent. Fully refined paraffin fulfills satisfactorily certain general sanitary criteria but greater uniformity and efficiency should be obtained in waxing procedures. An efficient paraffining process also acts as a secondary line of defense against contamination with micro-organisms.

The use of germicidal and bacteriostatic agents in container materials, that are toxic to human being or that effect milk in any way, should be strictly prohibited. Substances which might conceivably exert germicidal or bacteriostatic activity must not be used unless they have been shown to be nontoxic and without effect on milk, through the use of physical, chemical, and biological tests, supported by clinical evidence.

Sanitary Production of Milk Container Board.

Sanitation in paper milk containers invariably goes back to the original board. Specifications for board should include, in addition to the exclusive use of virgin 2588 pulp, low bacterial counts, low dirt counts, and absence of slime spots. Slimes are accumulated microbiological growths occurring in pulp and paper mill systems. These organisms are usually heat-resistant, and hence, may persist through paper-making operations. The slime growths which build up are frequent causes of discolorations, objectionable odors and spotting in paper. The elimination of slime at its source by suitable bactericidal treatments is a necessary prerequisite to the production of board having satisfactory sanitary quality for milk containers. Some mills are taking voluntary action in this matter, requesting periodic inspections and plant tests as aids to consistent sanitary practicies and to the establishment of effective programs of microbiological control.

The following table presents a series of typical board counts obtained during recent tests using agar. These have been arranged, for the sake of clarity, in the order of decreasing magnitude. Incubation was at 32° C. for 3 days.

TABLE II.—BACTERIAL COLONIES PER GRAM OF DISINTEGRATED BOARD.

Tests	Mill A	Mill B	Mill C	Mill D
1	242	490	108	143
2	187	346	77	112
3	171	318	73	100
4	163	307	49	96
5	138	262	43	90
6	129	210	32	75
7	119	209	22	54
8	104	172	21	54
9	101	167	11	49
10	86	107	7	43
11	76	97	0	32
12	69	92	00	11

Eighty per cent of the tests in a series of 137 examinations representing seven pulp and paper mills, yielded counts of less than 250 colonies per gram of board.

2589 While the scope of this work has, thus far, been somewhat limited, later reports will provide more complete information.

Sanitary Production of Paper Milk Containers.

Sanitarily produced milk container board, properly handled, determines the sanitary condition of fabricated containers. Proper handling of uncontaminated paper includes:

1. Suitable protection of finished paper at mill with sanitary wrappings and sealing.
2. Discarding of top and bottom, or outside sheets at converting plants and mechanical handling so far as possible of stock and containers.
3. Prevention of contamination from manual contact, dirt, flushing water, and insects during container formation, moisture-proofing, conveying, filling, and sealing.
4. Adequate, dry, sanitary storage for paper products at milk plants and storage rooms.

The Institute of Research which has been established at the New York State Agricultural Experiment Station, maintains close contact with paper milk container sanitation at pulp and paper mills, converting factories, and milk plants, working in co-operation with manufacturers and public health officials toward the attainment and maintenance of high sanitary standards.

2590 PLAINTIFF'S EXHIBIT NO. 23.

February 18, 1939.

Mr. J. M. S. Ewing,
Manager of Sales,
Cherry River Paper Company,
Pennsylvania Building,
Philadelphia, Pa.

Dear Mr. Ewing:

I submit, herewith, a report of the bacteriological analysis of milk container board, samples No. 3389-159, received from your mill on February 14, 1939.

This sample was collected by members of the mill laboratory under directions given by the Geneva laboratory. Standard nutrient agar was used in plating, and incubation was carried at 37° C. for 48 hours.

Bacteriological Analysis of Paperboard.

	Colonies per Gram of Disintegrated Paperboard
Sample No. 1	
Test 1	0
Test 2	0
Test 3	0
Test 4	less than 7
Test 5	less than 7
Sample No. 2	
Test 1	0
Test 2	0
Test 3	0
Test 4	0
Test 5	0

Very truly yours,

J. R. Sanborn.

J. R. Sanborn.

JRS:MC

2591 PLAINTIFF'S EXHIBIT 24.

List of Cities Using Paper Milk Containers.

United States

New York City
Bridgeport, Conn.
Jersey City, N. J.
Newark, N. J.
Trenton, N. J.
Philadelphia, Pa.
Baltimore, Maryland
Cleveland, Ohio
Detroit, Michigan
St. Louis, Mo.
Seattle, Washington
Los Angeles, Cal.
Maplewood, N. J.
Nutley, N. J.
Milburn, N. J.
East Orange, N. J.
Wrightstown, N. J.
Bordentown, N. J.
Santa Barbara, Calif.
San Francisco, Calif.
Seattle, Wash.
Pittsburgh, Pa.
Globe, Arizona
Miami, Arizona
Phoenix, Arizona
Merced, Calif.
Sioux City, Iowa
Wichita, Kansas
Hutchinson, Kansas
Kalamazoo, Michigan
Omaha, Nebraska
McCook, Nebraska

Orange, N. J.
Plainfield, N. J.
Belleville, N. J.
Worcester, Mass.
Toledo, Ohio
Urbana, Ill.
Atlanta, Ga.
Wilmington, Del.
Yonkers, N. Y.
Mt. Vernon, N. Y.
New Rochelle, N. Y.
Portchester, N. Y.
Buffalo, N. Y.
Rochester, N. Y.
Erie, Pa.
Hackensack, N. J.
Englewood, N. J.
Harrison, N. J.
Norwalk, Conn.
Niagara Falls, N. Y.
Allentown, Pa.
Reading, Pa.
Bethlehem, Pa.
Chester, Pa.
New Haven, Conn.
Hoboken, N. J.
Union City, N. J.
Patterson, N. J.
Passaic, N. J.
Montclair, N. J.
Asbury Park, N. J.
Flint, Mich.
Dearborn, Mich.
Highland Park, Mich.
46 Chicago suburbs
Long Island City, N. Y.
Brooklyn, N. Y.
Long Island, N. Y.

Holdredge, Nebraska
North Arlington, N. J.
Lebanon, N. J.
Camden, N. J.
Califon, N. J.
Irvington, N. J.
Lakewood, N. J.
N. Bergen, N. J.
Madison, N. J.
Perth Amboy, N. J.
Belman, N. J.
Phillipsburg, N. J.
Clifton, N. J.
Rutherford, N. J.
Linden, N. J.
Bayonne, N. J.
Blairstown, N. J.
Mankato, Minn.
Poughkeepsie, N. Y.
Watertown, N. Y.
Sandusky, Ohio
Carbondale, Pa.
Plymouth, Pa.
Hazleton, Pa.
Pampa, Texas.
Dallas, Texas
Hopewell, Virginia.
Indianapolis, Indiana.
Washington, D. C.
Everett, Wash.
Oakland, Calif.
Hollywood, Calif.
Glendale, Calif.
Burbank, Calif.
San Bernadino, Calif.
Long Beach, Calif.
Berkeley, Calif.

2592 **Canada.**

New Liskeard, Ontario
Blenheim, Ont.
Kingston, Ont.
Huntsville, Ont.
Windsor, Ont.
Caledonia, Ont.
Simcoe, Ont.
Toronto, Ont.
Belleville, Ont.
Hamilton, Onto.
Kirkland Lake, Ont.
Galt, Ont.
Goderich, Ont.
Islington, Ont.
North Bay, Ont.
Tillsonburg, Ont.
Kincardine, Ont.
Guelph, Ont.
Orillia, Ont.
Sault St. Marie, Ont.
Kitchener, Ont.
Meaford, Ont.
Ottawa, Ont.
Ancaster, Onto.
Southampton, Ont.
Port Elgin
Mountain Park, Alberta
Edmonton, Alberta
Leyland, Alberta
Rouyn, Quebec
Truro, Nova Scotia.

2593 PLAINTIFF'S EXHIBIT NO. 25.

November 14, 1938.

Mr. Martin Dwyer
53 Park Place
808 Dodge Building
New York City, N. Y.

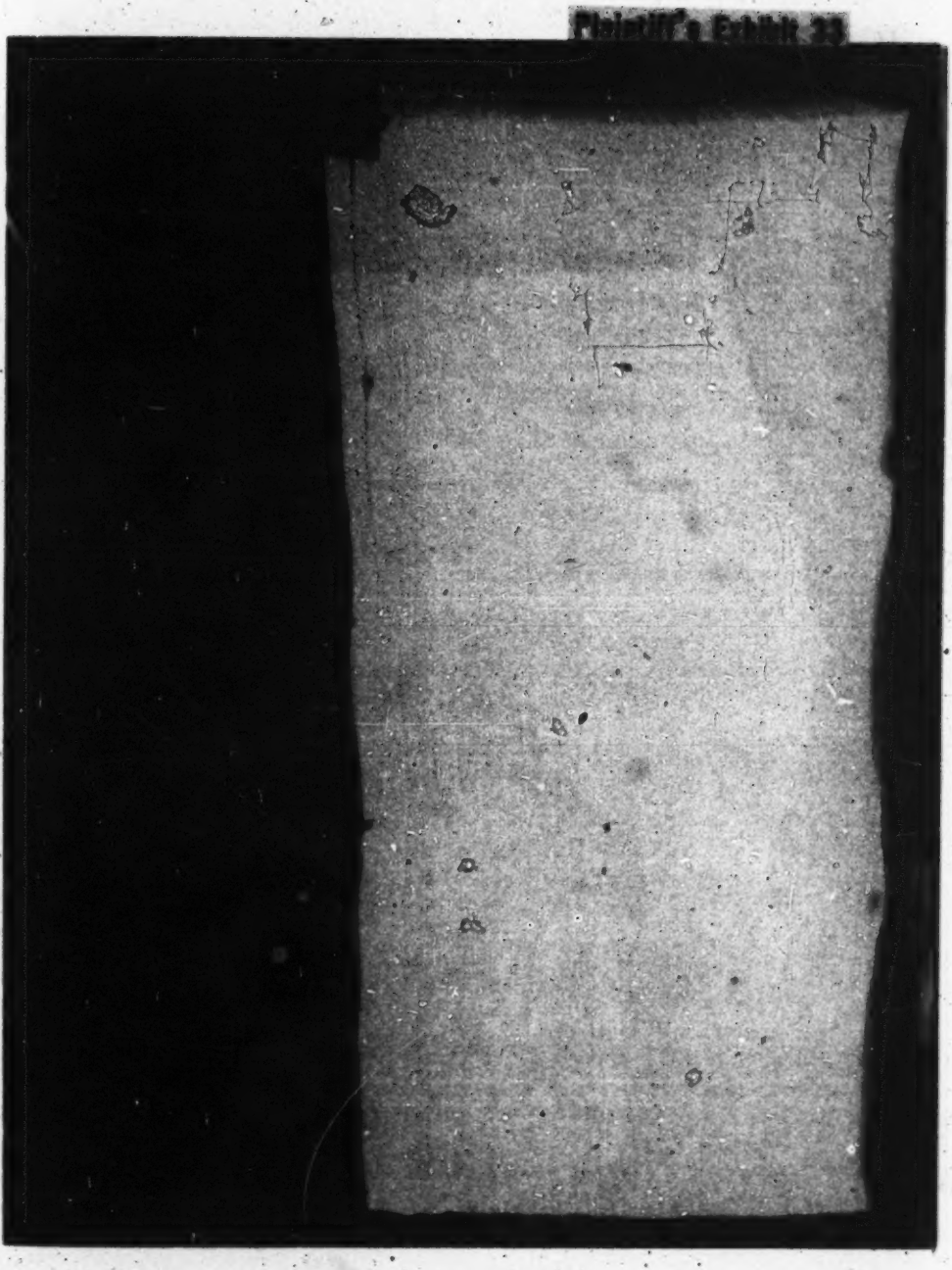
Dear Mr. Dwyer:

In accord with the request made by Mr. Scott's secretary, I enclose a list of towns and cities in the United States and Canada which are using paper containers for regular production of milk and cream.

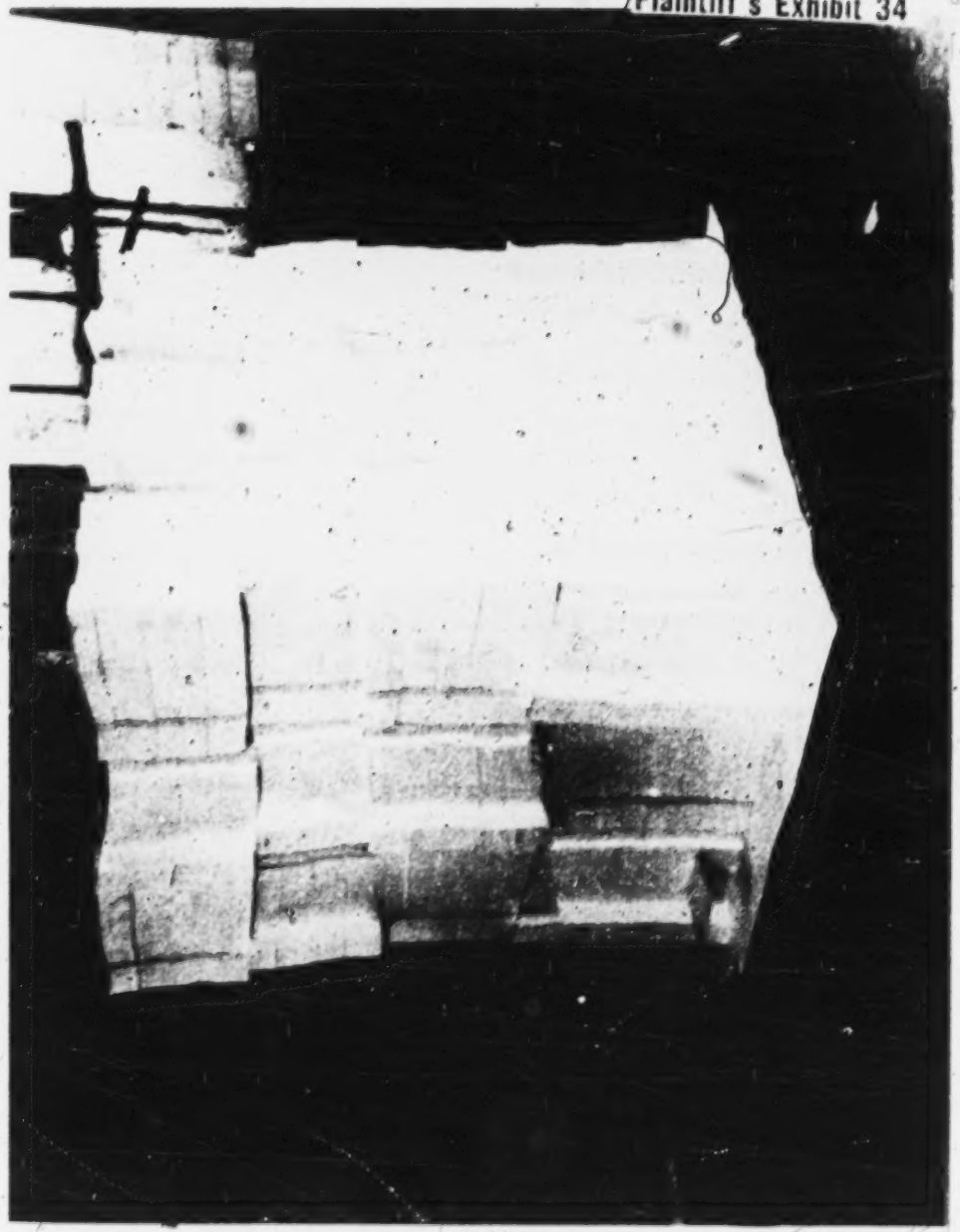
Very truly yours,
J. R. S.
J. R. Sanborn.

JRS-H.

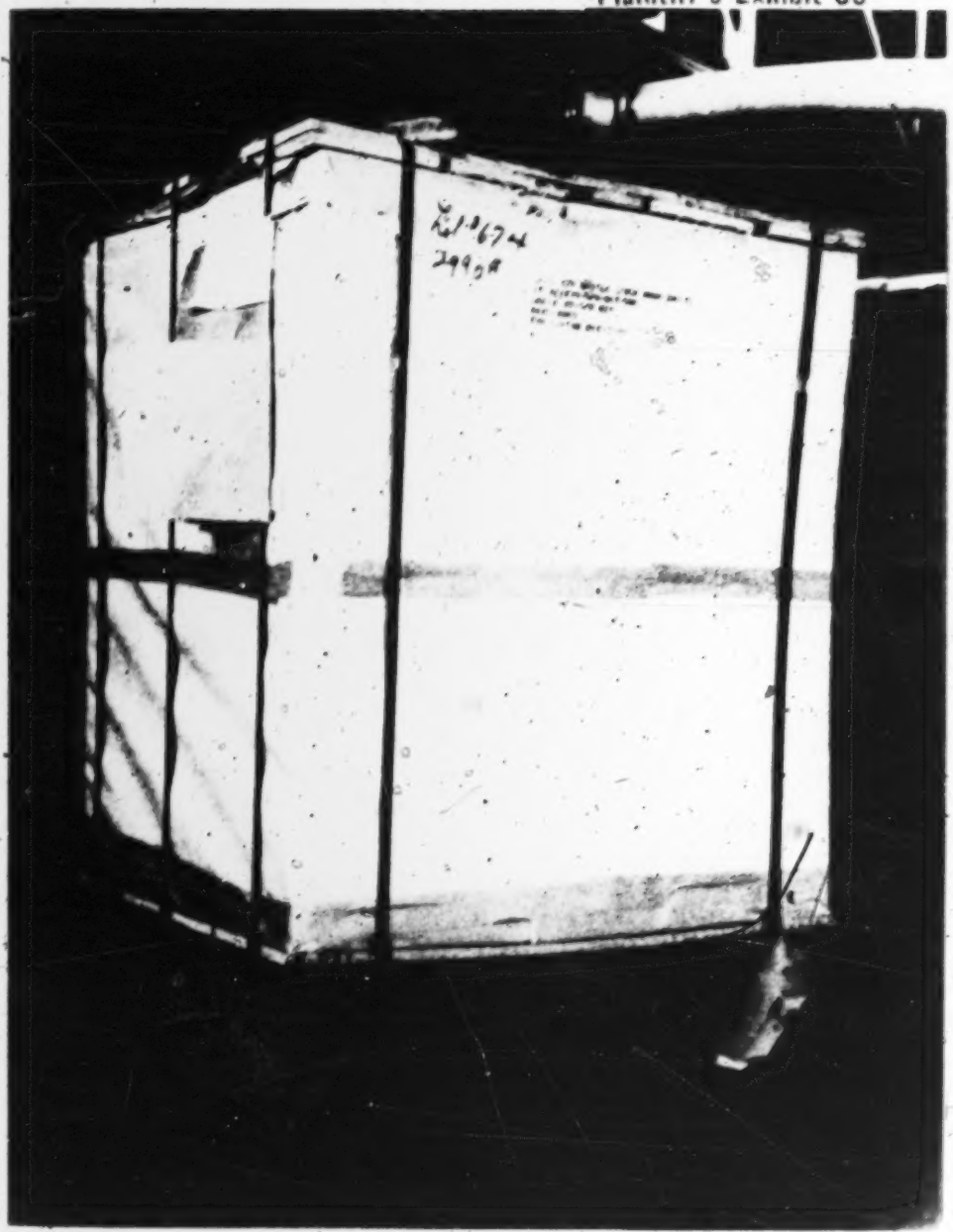
Copy to:
Mr. George D. Scott
Pure-Pak Division
Ex-Cell-O Corporation
1200 Oakman Boulevard
Detroit, Michigan.


Plaintiff's Exhibit 33

Plaintiff's Exhibit 34

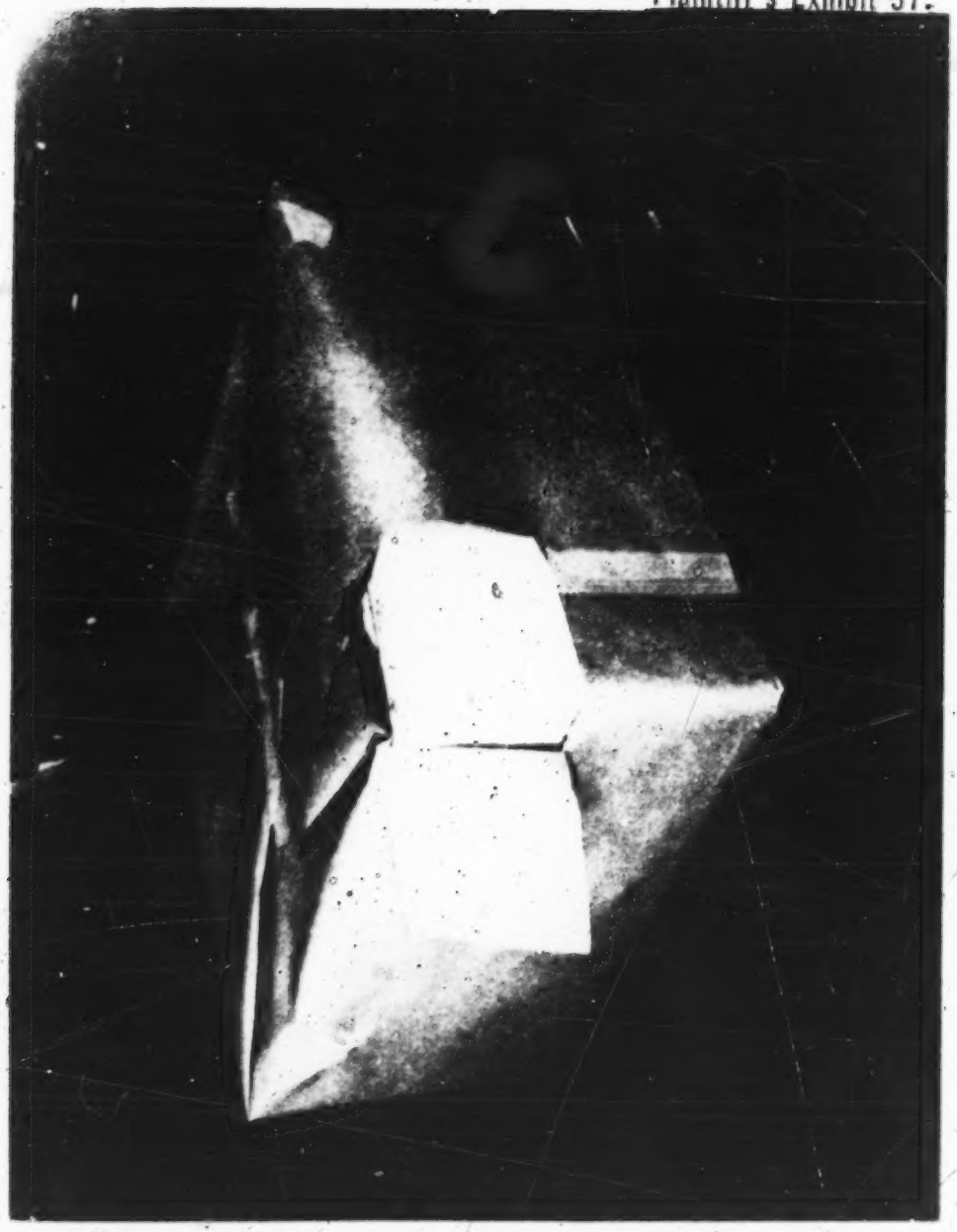


Plaintiff's Exhibit 35

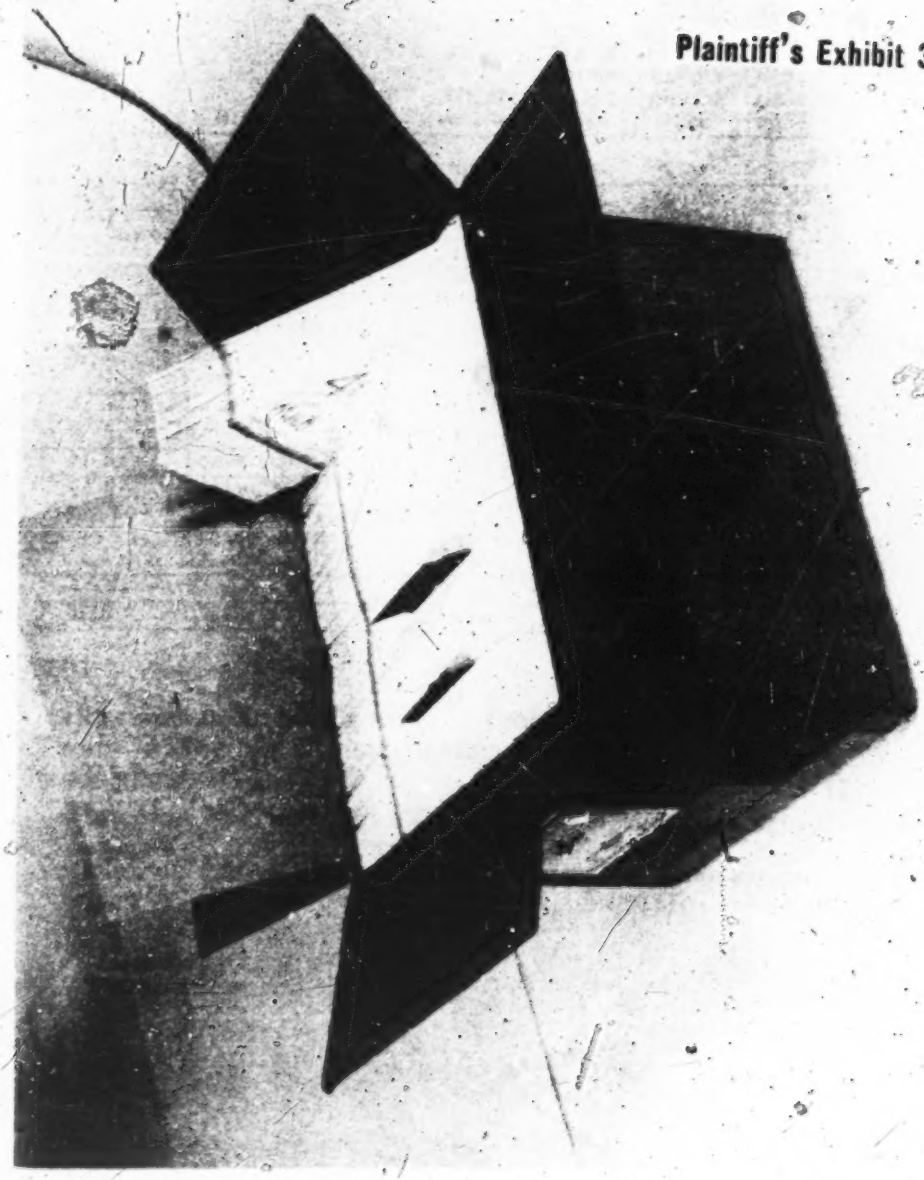


Plaintiff's Exhibit 36

Plaintiff's Exhibit 37.



Plaintiff's Exhibit 38



2600 **PLAINTIFF'S EXHIBIT NO. 39.**

SAMPLES OF MILK BOTTLE CARTON

Date sample taken	Brand or name	Wt. of sample	Vol. of disintegrated fluids	disintegrating time	Colonies 1 g. nutrient agar. 48 hrs. @ 37° C.
4/21	Lang's Sealed Milk (Qt.) Buffalo, N. Y.	10 g.	900 cc.	¾ hr.	70
4/23	Risdon Detroit (Pt.)	10 g.	900 cc.	¾ hr.	50
4/24	Risdon Detroit (Qt.)	10 g.	890 cc.	½ hr.	27
4/25	Risdon Detroit (Qt.)	10 g.	955 cc.	½ hr.	96
4/28	Lang Buffalo (Qt.)	10 g.	870 cc.	½ hr.	82
5/ 2	Risdon Coffee Cream (Pt.)	10 g.	850 cc.	1 hr.	no count
5/ 3	Greenbrier Lewisburg Co. (Qt.)	10 g.	790 cc.	¾ hr.	no count
5/ 4	Langs light cream (Pt.)	10 g.	880 cc.	1 hr.	no count
5/ 5		10 g.	890 cc.	1 hr.	no count
5/ 8	Langs (Qt.)	10 g.	930 cc.	1 hr.	18
5/ 9	Risdon (Qt.)	10 g.	820	1 hr.	57
5/10	Johnsons Dertoit, Mich. cottage cheese 12 oz.	10 g.	960	¾ hr.	no count
5/11	Kroger Qt.	10 g.	1040	¾ hr.	40
5/12	Risdon (Qt)	10 g.	860	1 hr.	no count

2601 4/3/39.

Obtained milk bottle cartons from C. Pigman in Glue Room. Asked him to send 10 samples each day of different kinds glued.

Plated on Nutrient Agar 37° C. for 24 hrs. and 48 hrs.

Date sample taken	Tested	Wt. of sample	Vol. of suspension	Colonies per gram	
4/3/39	4/5/39	10 g.	1156	24 hrs.	48 hrs.

2602 MILK BOTTLE CARTONS FROM CHAS. PIGMAN

Date sample was taken	Wt. of sample	Total vol. of suspension	Colonies 1 gram incubated in nutrient agar for 48 hrs. @ 37° C.
5/16/39	10 grams	1150 cc.	46 colonies 1 gram
5/17/39	10 grams	925 cc.	90 colonies 1 gram
5/18/39	10 grams	830 cc.	none
5/19/39	10 grams	775 cc.	24 colonies 1 gram
5/20/39	10 grams	900 cc.	27 colonies 1 gram
5/23/39	10 grams	910 cc.	54 colonies 1 gram
5/24/39	10 grams	1020 cc.	none colonies 1 gram
5/25/39	10 grams	1000 cc.	none
5/26/39	10 grams	1080 cc.	54 colonies 1 gram

2603 MILK BOTTLE BOARD CHERRY RIVER CO.

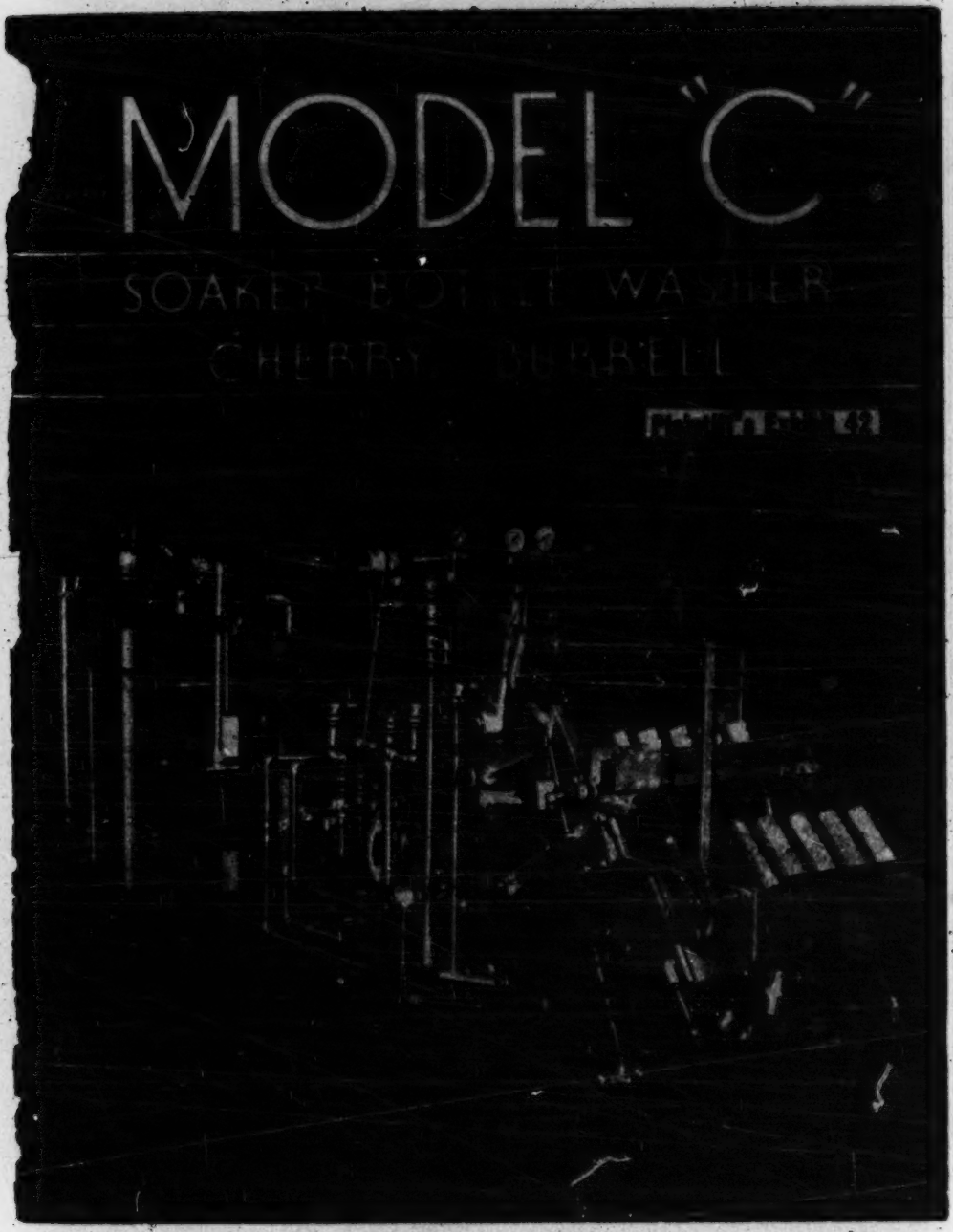
	Lot No.	Wt. of sample	Total bal.	Time	colonies 1 gram
					7.8 2
674	Rec'd 2/17/39	10 g.	785	¾ hr.	15.6 (16)
585	Rec'd 1/14/39	10 g.	890	¾ hr.	none
858	Rec'd 4/15/39	10 g.	1000	1 hr.	31

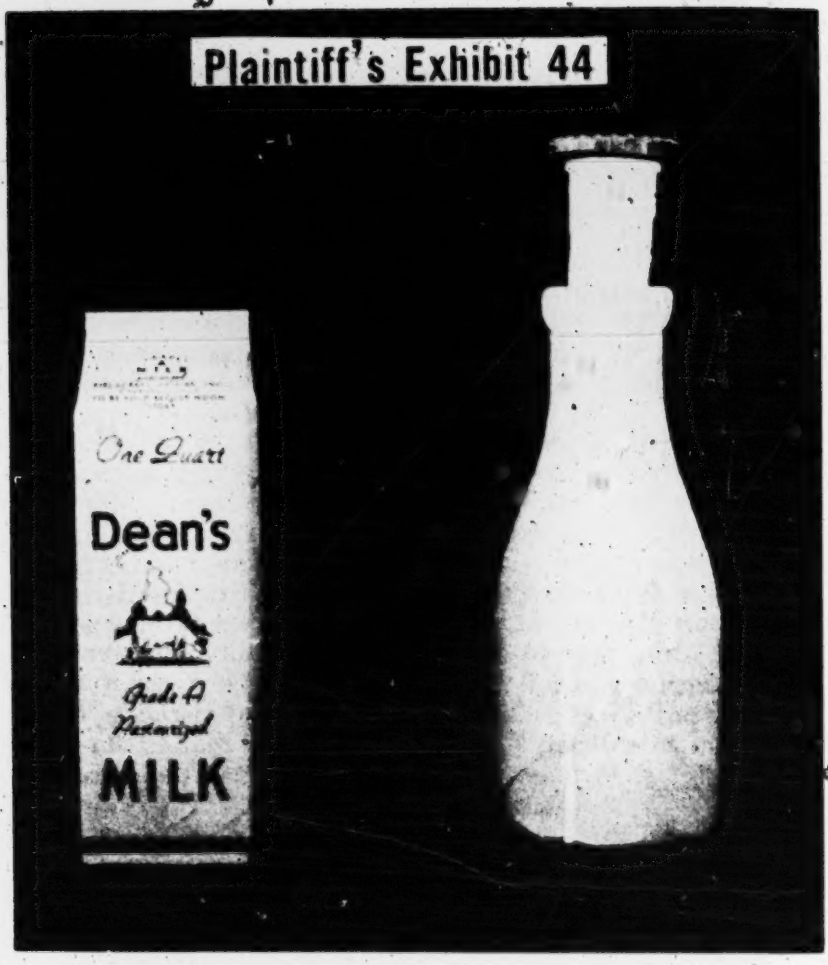
2604 21 COMPLETED SAMPLES OF MILK BOTTLES (GLUED) FROM C. PIGMAN.

Date sample taken	Wt. of sample	Total vol.	Bacterial 1 g. 37° C. 48 hrs. nutrient agar		Name on Carton
4/10	10 g.	1000 cc.	10	Qt.	Tampa Buttermilk Producers
4/11	10 g.	1110 cc.	33	Qt.	Tampa Buttermilk Producers Chocolate Milk
4/12	10 g.	1175 cc.	no count	Qt.	Tampa Buttermilk Producers
4/13	10 g.	1060 cc.	no count	½ Pt.	Risdon Bros. Inc. Whipping Cream
4/14	10 g.	960 cc.	50	Qt.	Kroger
4/15	10 g.	940 cc.	20	Qt.	Kroger
4/17	10 g.	790 cc.	no count	Pt.	Tampa Buttermilk Producers
4/18	10 g.	890	no count	½ Pt.	Hebracle Milk Co. Columbus, O.

2605 MILK BOTTLE CARTONS.

Rec'd	Wt.	Bal.	Time	Colonies 1 gram Agar 37° C. 48 hrs.	
4/20/39	10 g.	920 cc.	¾ hr.	10	Risdon Bros.
4/21/39	10 g.	940 cc.	1 hr.	100	Risdon Bros.


MODEL "C"


Plaintiff's Exhibit 44
One Quart
Dean's
Grade A
Pasteurized
MILK

2622 **PLAINTIFF'S EXHIBIT NO. 45.**

The Hilton-Davis Chemical Co.
Manufacturers of Fine and Industrial Chemicals
Office, Chemical Works and Research Laboratories
Langdon Road and Penn. R. R.

P. O. Box 8, Pleasant Ridge Station

Cincinnati, Ohio
23 June, 1939

Messrs. Gariepy and Gariepy
One North LaSalle Street, Suite 1361
Chicago, Illinois

Gentlemen:

At your request we are setting forth the following description of formulations used in the printing of Dean Milk Company milk cartons. There were six (6) inks used in the printing of these cartons and the following shows the percentage of each ingredient and an explanation of each component.

As indicated in the following formulas, a printing ink consists of a dry color, that is a colored material which is insoluble in water, an extender, a white inert material also insoluble in water, a vehicle, which is in most cases a drying oil and consists of linseed oil, a wax, and a drier. The ingredients are stirred until the dry material is wetted with the vehicle and it is then run over an attrition mill to disperse the solids into the vehicle to a smooth, homogeneous mass. When printed, the vehicle oxidizes thus forming a hard, tough film which adheres to the paper because of the fact that while still wet it penetrates into the fiber and thus forms a closely knitted bond.

#19990 Dean Pink					
	5	Pounds	—	Ounces	Superlith
	1	"	—		Magnesia
	—		8	"	28-F-100 Lithol Rubine
	2	"	—		55 Vehicle Deodorized
	1	"	—		#3 Pale Linseed Vehicle
	—		5	"	Ceresine Wax
	—		4	"	#280 Drier
	—		2	"	#211 Drier

#120274-1 Maroon					
	—	Pounds	4	Ounces	Magnesia
	—		4	"	Talc
	—		10	"	#173 Red. Ca. Lithol
	—		6	"	10-F-100 Ba. Lithol
	2	"	8	"	#475 Vehicle Alkyd
	—		1½	"	Ceresine Wax
	—		1½	"	#211 Drier
	—		½	"	#280 Drier

2623

#14143 Dean Brown	2	Pounds	8	Ounces	Magnesia
	22	"	8	"	Med. Chrome Yellow
	2	"	8	"	#120 Sod. Lithol Red
	2	"	3	"	1307 Carbon Black
	1	"	4	"	102 Barium Lithol Red
	11	"	4	"	#3 Pale Linseed Vehicle
	7	"	8	"	#0 Pale Linseed Vehicle
	2	"	8	"	#622 Wax Compound
	1	"	14	"	#6 Drier
#16358 Dean Orange	9	Pounds	—	Ounces	#457 Alkyd Vehicle
	1	"	2	"	#622 Compound Wax + linseed
	—		12	"	#5 Drier
	1	"	—		#6 Drier
	16	"	8	"	1666 Orange—Red Lake CY
	2	"	4	"	120364 Barium Lithol
	3	"	6	"	11356 Med. Chrome Yellow
#10782 Dean Blue	3	Pounds	—	Ounces	1575 Magnesium + linseed
	14	"	—		1508 TiO_2 + linseed
	3	"	—		10511 Tungstate Blue and linseed
	1	"	8	"	#3 Pale Linseed Vehicle
	—		12	"	#622 Wax and linseed Comp.
	1	"	8	"	#5 Drier
	1	"	—		#6 Drier
#17591-3 Dean Green	15	Pounds	—	Ounces	#11347 Light Chrome Yellow and linseed
	2	"	8	"	#11356 Med. Chrome Yellow and linseed
	3	"	5	"	#10037 Iron Blue and linseed
	1	"	—		#17294 Tungstate Green and linseed
	4	"	8	"	#457 Alkyd Vehicle
	1	"	8	"	#622 Wax and linseed
	1	"	12	"	#6 Drier
	—		12	"	Dextrine
	1	"	8	"	Magnesia
	1	"	—		Ceresine Wax

2624 Superlith:

Is a white inert, finely divided pigment made of 20% titanium dioxide and 80% lithophone, the lithophone being a mixture of barium sulphate and zinc sulphide. Is commonly used as an inert pigment in colors used on food cartons, wrappers, bags, etc.

Magnesium:

Ordinary magnesium carbonate. Is a white powder, chemically pure, edible, and is a pharmaceutical product.

Lithol Rubine:

An organic color which can be certified as a food color. It is an inert pigment which has been allowed as a food color when certified by the federal government. Insoluble in water and milk.

#55 Vehicle:

Made from pure linseed oil and a gum made by condensing rosin and glycerin, commonly called ester gum. The vehicle is a solution of the gum in the oil. Drying occurs by oxidation of the oil and the resulting tough, hard film is insoluble in water.

#3 Pale Linseed Vehicle:

Made from pure linseed oil by heating to 600 degrees F. for approximately two (2) hours, which thickens the oil. When used in an ink, it dries to a tough, hard film insoluble in water and milk.

Ceresine Wax:

A yellow-white, highly refined wax similar to paraffine in derivation and physical and chemical properties but harder. Like paraffine, it is insoluble in water and milk. Commonly used in inks for printing containers and wrappers for all kinds of food.

Driers:

A drier is a metallic linoleate. Its purpose in ink is to cause the vehicle to rapidly oxidize to a hard, tough film insoluble in water and paraffine. Without the drier the vehicle would remain wet indefinitely. Some driers are suitable for surface drying, others for body drying of the vehicle. Driers are made by the chemical reaction
2625 between metallic compounds like manganese, lead or cobalt, with linseed oil whereby there is produced a paste resembling mayonnaise in consistency, and which oxidizes to hard, tough film form. In both the paste and dried film form, the drier is insoluble in water and milk.

Driers are incorporated into inks to the extent of three or four per cent of the total weight of ink. The metallic content of driers is approximately 25 per cent the weight of drier.

Driers are a necessary component of all inks made from drying oils and are used on all types of food wrappers and packages.

Talc:

Ordinary triple-floated white talcum powder same as used in cosmetics.

#173 Red:

A calcium lithol. It is an inert pigment which has been allowed as a food color when certified by the federal government. This pigment is insoluble in milk and water.

#10-F-100 Red:

A barium lithol, same as #173 Red but of a different shade.

#475 Vehicle.

An alkyd resin made by condensing linseed oil with phthalic anhydride and glycerin. When this resin is dissolved in a drying oil such as linseed, it forms a hard film which is used in enamels and produces a very favorable vehicle for an ink which is on a food wrapper due to its high insolubility in liquids such as water and milk.

Medium Chrome Yellow:

An inorganic yellow pigment of a lead chromate constitution. This pigment is highly insoluble in water and milk and when ground into a vehicle forms a hard film highly insoluble in water. Has long been used in making inks for food cartons, wrappers and bags.

#120 Red:

Sodium lithol, same as #173 Red and 10-F-100 Red but of a different shade.

2626 #1307 Carbon Black:

Ordinary gas black. To produce, illuminating gas is burned with a deficiency of oxygen and the resulting pure carbon is collected on cold plates. This material is highly insoluble in any liquid.

#102 Barium Lithol Red:

Same as #173 Red except different shade.

#622 Compound:

Made from a mineral wax and linseed oil, the mineral wax being a highly refined paraffine wax.

#457 Vehicle:

The same constitution and properties as #475 Vehicle, the only difference being in viscosity.

#1666 Orange:

A pigment which can be certified as a food color. This color is insoluble in water and milk and differs from the lithols slightly.

#120364 Barium Lithol:

Same as 10-F-100.

#11356 Yellow:

Same as Medium Chrome Yellow.

#1575 White:

Magnesium carbonate, described before, is ground with linseed oil to form this basic white. It is used to cut the color strength of the inks.

#1508:

Titanium dioxide plus linseed oil. Titanium dioxide is a pure white oxide of titanium metal. It is highly inert and is used to form tints for printing inks. Not soluble in water or milk.

#10511 Blue:

Organic blue lake plus linseed oil. Blue lake is made by making a blue water-soluble dyestuff insoluble thus forming a pigment which is insoluble in water and milk and can be readily dispersed in a linseed oil.

#11347 Yellow:

Chrome yellow plus linseed oil. The chrome yellow in this material is the same as above described except that it has been ground into a linseed oil to form a base color.

#11356 Yellow:

Same as #11346 except a deeper shade, the chemical and physical properties being the same.

2627 #10037 Bronze Blue:

Iron blue plus linseed oil. Iron blue is a complex inorganic compound which has been used in the printing ink industry for many years. It is insoluble in water and milk and is used for the printing of food wrappers, cartons and bags.

#17294 Green:

An organic green lake plus linseed oil. This is an organic lake insoluble in water made from a green dyestuff which was originally soluble in water and milk, plus linseed oil.

Dextrine:

Edible sugar, used in candies and foods.

All of these inks dry to a hard film and are insoluble in any of the ingredients which are found in milk, even before the paraffine coating is applied. They are made up in accordance with accepted procedures and with raw materials commonly used in the manufacture of offset and lithographic inks.

Yours very truly,
The Hilton-Davis Chemical Company,
By: L. A. Hoffman,
Vice President.

LAHoffman
FG

2628 PLAINTIFF'S EXHIBIT 46.

Table 18. Study on Self Purification of Paper.

This experiment was conducted as follows: Plaques of paper board 2" x 4½" were infected by being dipped in a suspension of B. prodigiosus containing 600,000,000 bacteria per ml. The plaques were kept at room temperature after being infected.

The plaques were examined for bacteria
1. Immediately after being inspected.
2. 30 minutes later.
3. 60 minutes later.
4. 2 hours later.
5. 5 hours later.
6. 9 hours later.
7. 24 hours later.

Each plaque was reduced to pulp in 200 ml. of water and 10 plates were prepared, each receiving 2 ml. of the mixture. Each plaque was infected with 1,400,000 bacteria.

Age of Infected Plaques	Number of colonies on each of 10 plates										% Reduction
	1	2	3	4	5	6	7	8	9	10	
Examined as soon as infected	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	0
30 minutes	450	450	450	450	450	450	450	450	450	450	96.8
60 minutes	3	4	5	7	7	8	9	10	12	20	99.94
2 hours	0	0	0	0	0		1	1	1	2	99.99
5 hours	0	0	0	0	0	0	0	1	1	3	99.99
9 hours	0	0	0	0	0	0	0	0	0	0	100.00
24 hours	0	0	0	0	0	0	0	0	0	0	100.00

2629 **PLAINTIFF'S EXHIBIT NO. 47.**

Table 14—Bacterial Condition of Pure-Pak Containers from Fieldcrest Dairy.

No. of Container	Bact. Count	No. of Container	Bact. Count	No. of Container	Bact. Count	No. of Container	Bact. Count	No. of Container	Bact. Count
1	1,250	41	1	81	0	121	0	161	0
2	428	42	1	82	0	122	0	162	0
3	120	43	1	83	0	123	0	163	0
4	110	44	1	84	0	124	0	164	0
5	100	45	1	85	0	125	0	165	0
6	100	46	1	86	0	126	0	166	0
7	100	47	1	87	0	127	0	167	0
8	50	48	1	88	0	128	0	168	0
9	50	49	1	89	0	129	0	169	0
10	50	50	1	90	0	130	0	170	0
11	50	51	1	91	0	131	0	171	0
12	50	52	1	92	0	132	0	172	0
13	50	53	1	93	0	133	0	173	0
14	50	54	0	94	0	134	0	174	0
15	50	55	0	95	0	135	0	175	0
16	50	56	0	96	0	136	0	176	0
17	27	57	0	97	0	137	0	177	0
18	14	58	0	98	0	138	0	178	0
19	9	59	0	99	0	139	0	179	0
20	8	60	0	100	0	140	0	180	0
21	7	61	0	101	0	141	0	181	0
22	6	62	0	102	0	142	0	182	0
23	6	63	0	103	0	143	0	183	0
24	6	64	0	104	0	144	0	184	0
25	4	65	0	105	0	145	0	185	0
26	4	66	0	106	0	146	0	186	0
27	3	67	0	107	0	147	0	187	0
28	2	68	0	108	0	148	0	188	0
29	2	69	0	109	0	149	0	189	0
30	2	70	0	110	0	150	0	190	0
31	2	71	0	111	0	151	0	191	0
32	2	72	0	112	0	152	0	192	0
33	2	73	0	113	0	153	0	193	0
34	2	74	0	114	0	154	0	194	0
35	2	75	0	115	0	155	0	195	0
36	2	76	0	116	0	156	0	196	0
37	2	77	0	117	0	157	0	197	0
38	2	78	0	118	0	158	0	198	0
39	1	79	0	119	0	159	0	199	0
40	1	80	0	120	0	160	0	200	0

Mathematical average 14 bacteria per bottle.

Table 12. Bacterial Condition of Pure-Pak Paraffined Container as Revealed by Four Different Methods

Each container was rinsed with 100 ml. water. 1 ml. of the water put in each of two agar plates		Each container was rinsed with 10 ml. water. All recovered water was divided in three agar plates			Each container was rinsed with 20 ml. of water. Measured 10 ml. of it was divided in three agar plates			No rinse water was used. Agar poured directly in containers and was incubated in it			
Number of colonies that developed on the plates and in agar in containers											
No. of container	No. of colonies on 2 plates	No. of container	No. of colonies on 2 plates	No. of container	No. of colonies on 3 plates	No. of container	No. of colonies on 3 plates	No. of container	No. of colonies on 3 plates	No. of container	No. of colonies on 3 plates	No. of container	No. of colonies on agar in each container	No. of container	No. of colonies on agar in each container
1	0-0	26	0- 0	1	0-0-0	26	0- 0- 0	1	0-0-0	26	0- 0- 0	1	0	26	0
2	0-0	27	0- 0	2	0-0-0	27	0- 0- 0	2	0-0-0	27	0- 0- 0	2	0	27	0
3	0-0	28	0- 0	3	0-0-0	28	0- 0- 0	3	0-0-0	28	0- 0- 0	3	0	28	0
4	0-0	29	0- 0	4	0-0-0	29	0- 0- 0	4	0-0-0	29	0- 0- 0	4	0	29	0
5	0-0	30	0- 0	5	0-0-0	30	0- 0- 0	5	0-0-0	30	0- 0- 0	5	0	30	0
6	0-0	31	0- 0	6	0-0-0	31	0- 0- 1	6	0-0-0	31	0- 0- 0	6	0	31	0
7	0-0	32	0- 0	7	0-0-0	32	0- 0- 1	7	0-0-0	32	0- 0- 0	7	0	32	0
8	0-0	33	0- 0	8	0-0-0	33	0- 0- 1	8	0-0-0	33	0- 0- 0	8	0	33	0
9	0-0	34	0- 0	9	0-0-0	34	0- 0- 1	9	0-0-0	34	0- 0- 0	9	0	34	0
10	0-0	35	0- 0	10	0-0-0	35	0- 0- 1	10	0-0-0	35	0- 0- 0	10	0	35	0
11	0-0	36	0- 0	11	0-0-0	36	0- 0- 1	11	0-0-0	36	0- 0- 0	11	0	36	0
12	0-0	37	0- 0	12	0-0-0	37	0- 0- 1	12	0-0-0	37	0- 0- 1	12	0	37	0
13	0-0	38	0- 1	13	0-0-0	38	0- 0- 1	13	0-0-0	38	0- 0- 1	13	0	38	0
14	0-0	39	0- 1	14	0-0-0	39	0- 0- 1	14	0-0-0	39	0- 0- 1	14	0	39	0
15	0-0	40	0- 1	15	0-0-0	40	0- 0- 1	15	0-0-0	40	0- 0- 1	15	0	40	0
16	0-0	41	0- 1	16	0-0-0	41	0- 0- 1	16	0-0-0	41	0- 0- 1	16	0	41	0
17	0-0	42	0- 1	17	0-0-0	42	0- 1- 1	17	0-0-0	42	0- 0- 1	17	0	42	0
18	0-0	43	0- 1	18	0-0-0	43	0- 1- 1	18	0-0-0	43	0- 0- 1	18	0	43	0
19	0-0	44	0- 1	19	0-0-0	44	0- 1- 2	19	0-0-0	44	0- 0- 1	19	0	44	0
20	0-0	45	0- 1	20	0-0-0	45	0- 0- 4	20	0-0-0	45	0- 1- 1	20	0	45	1
21	0-0	46	0- 1	21	0-0-0	46	0- 2- 4	21	0-0-0	46	0- 1- 2	21	0	46	1
22	0-0	47	0- 2	22	0-0-0	47	2- 2- 3	22	0-0-0	47	0- 1- 2	22	0	47	1
23	0-0	48	0- 2	23	0-0-0	48	1- 2- 6	23	0-0-0	48	0- 0- 4	23	0	48	1
24	0-0	49	1- 1	24	0-0-0	49	7- 8- 12	24	0-0-0	49	0- 3- 4	24	0	49	2
25	0-0	50	8-17	25	0-0-0	50	112-144-172	25	0-0-0	50	12-19-29	25	0	50	110

2631 **PLAINTIFF'S EXHIBIT NO. 48.**

Table 8—Bacterial condition of washed and sterilized bottles in two plants in City of Chicago.

No. of Bottle	Bact. Count	No. of Bottle	Bact. Count	No. of Bottle	Bact. Count	No. of Bottle	Bact. Count
1	385,000	39	12,000	76	1,200	114	400
2	192,000	40	10,000	77	1,200	115	400
3	183,000	41	9,700	78	1,200	116	400
4	112,000	42	9,600	79	1,200	117	400
5	102,000	43	9,500	80	1,100	118	400
6	84,000	44	8,500	81	1,000	119	300
7	84,000	45	8,300	82	1,000	120	300
8	78,000	46	8,200	83	900	121	300
9	77,000	47	7,200	84	900	122	300
10	69,000	48	6,400	85	900	123	300
11	60,000	49	6,100	86	800	124	300
12	54,000	50	6,000	87	800	125	300
13	48,000	51	5,500	88	800	126	300
14	43,000	52	5,400	89	800	127	300
15	42,000	53	5,400	90	700	128	300
16	36,000	54	4,700	91	700	129	200
17	36,000	55	4,400	92	600	130	200
18	36,000	56	4,100	93	600	131	200
19	36,000	57	3,700	94	600	132	200
20	36,000	58	3,400	95	600	133	200
21	31,200	59	3,300	96	600	134	200
22	31,000	60	3,300	97	600	135	200
23	30,000	61	3,200	98	600	136	200
24	29,000	62	3,000	99	500	137	200
25	24,300	63	3,000	100	500	138	200
26	24,000	64	2,900	101	500	139	200
27	24,000	65	2,700	102	500	140	200
28	20,600	66	2,500	103	500	141	100
29	19,800	67	2,300	104	500	142	100
30	17,000	68	2,400	105	500	143	100
31	16,600	69	2,200	106	500	144	100
32	16,000	70	2,100	107	500	145	100
33	16,000	71	2,000	108	500	146	100
34	15,400	72	1,800	109	500	147	100
35	14,900	73	1,700	110	400	148	100
36	13,900	74	1,600	111	400	149	0
37	12,000	75	1,200	112	400	150	0
38	12,000			113	400		

Mathematical average 15,231.

2632 **PLAINTIFF'S EXHIBIT NO. 49.**

Table 8.

Bacterial Condition of 132 Pure-Pak paraffined containers from eleven different milk plants.

Number of containers	No. of colonies on duplicate plates
43	0—0
40	0—1
24	1—1
11	1—2
4	2—2
3	2—3
1	3—4
1	9—14

Table 9.

Bacterial Condition of 395 Pure-Pak Containers.

Number of containers	No. of colonies on plates
96	0—0
110	0—1
76	1—1
56	1—2
33	2—2
13	3—4
1	4—4
3	4—5
1	5—5
3	5—6
1	7—8
1	10—11
1	20—21

2633 **PLAINTIFF'S EXHIBIT NO. 50.**

Study on the Bacteriological Condition of the Paraffine Path in Pure-Pak Machine.

Place: Fieldcrest Dairy, Chemung, Illinois. Time: March 24, 1939.

Machine: Pure-Pak.

Temperature of Paraffine: 170° F.

Plan of the Study: During the operation of the machine while about 2,000 containers were being filled with milk, samples of the paraffine from the paraffine well were taken for bacteriological test.

The test consisted of: (1) agar plate, (2) agar tube. The paraffine samples were taken from the well, at intervals, by means of 10 cc. pipettes. Each sample consisted of 5 cc. of the paraffine. The paraffine was dropped in plates and warm agar was poured in for inoculation of the tubes, the paraffine was dropped in the tube in warm agar and this was shaken.

Table I.

Sample	Time Taken	No. of colonies on plates	Growth in Tubes	Remarks
1	11:50	0	0	At start
2	12:00	0	0	After whipping cream bottling
3	12:05	0	0	Before coffee cream bottling
4	12:15	0	0	After ½ pint cream bottled
5	12:30	0	0	After all cream bottled
6	12:50	0	0	Before milk bottling—slab of paraffine added.
7	1:05	0	0	15 minutes bottling milk
8	1:25	0	0	30 minutes bottling milk
	1:30			Slab of paraffine added
9	1:40	0	0	45 minutes bottling
10	1:55	0	0	60 minutes bottling—slab of paraffine added.
11	2:05	0	0	Bottling finished
12	2:05		+	Sample from train poked open
13	2:05		0	with a nail.

The test was repeated on March 26, Sunday.

The test was modified—Agar plates were prepared by pouring about 10 cc. of the paraffine in the plates, covering the whole bottom. Then nutrient agar was poured in and on the agar.

Nutrient broth in test tubes was inoculated by pouring in about 5 cc. of the paraffine.

Large test tubes were prepared by putting in each tube about 10 cc. of the paraffine and then rolling the tubes so that the paraffine covered most of the inside surface. After hardening, broth was poured in. These cultures were incubated at 90° F. for several days. Results are given in Table II.

2634

Sample	Time Taken	No. of Colonies	Agar Plate Counts	Large Tubes	Small Tubes	Remarks
1	11:20	0	0	0	000	Before bottling started
2	12:00	0	3	0	000	End of whipping cream bottling
3	12:25	0	1	0	000	End of coffee cream ½ pint bottling
4	12:45	0	0	0	000	End of qt. coffee cream bottling
5	1:00	0	0	0	000	15 minutes of milk bottling
6	1:16	0	0	0	00+	30 minutes of milk bottling
7	1:40	0	1	0	000	55 minutes of milk bottling
8	1:52	0	0	0	000	67 minutes of milk bottling
9	2:18	0	0	0	000	End of bottling

0 = no growth.
+ = growth.

2635 PLAINTIFF'S EXHIBIT NO. 51.

Table 16—Bactericidal Property of Paraffining.

Paper board plaques 2"x4½" were inoculated by being dipped in B. prodigiosus suspension and then paraffined at 170° F. for 15 seconds. As soon as paraffine coating hardened, the plaques were reduced to pulp in 200 ml. of water. Ten plates were poured each containing 2 ml. of the pulp mixture. In the table is given the number of colonies of B. prodigiosus that developed on each plate.

Abbreviations:

N = plaque not paraffined.
P = plaque paraffined.
W = plaque wet, not allowed to dry after being dipped in the suspension.
D = plaque dry, allowed to dry 30 minutes after being dipped in the suspension.
Ml = milliliter or cubic centimeter, about 20 drops.

Test 1 = Bacterial suspension used had a plate count of 2,120,000,000 per ml.

Plaques	Number of colonies on each of ten plates									
1—WN	508	532	554	638	682	648	752	908	975	1060
2—WP	0	0	0	0	0	0	0	0	1	1
3—WP	0	0	0	0	0	0	0	0	0	1
4—DN	13	18	19	21	23	25	26	25	41	41
5—DP	0	0	0	0	0	0	0	0	0	0
6—DP	0	0	0	0	0	0	0	0	0	0

Test 2 = Bacterial suspension used had a plate count of 59,000,000 per ml.

7—WN	438	340	444	474	524	566	626	628	845	910
8—WP	0	0	0	0	0	0	0	0	0	0
9—WP	0	0	0	0	0	0	0	0	0	0
10—DN	22	25	32	33	40	41	41	42	42	45
11—DP	0	0	0	0	0	0	0	0	0	1
12—DP	0	0	0	0	0	0	0	0	0	0

Test 3 = Bacterial suspension used had a plate count of 51,000,000 per ml.

13—WN	532	455	617	650	666	774	910	1040	1137	1430
14—WP	0	0	0	0	0	0	0	0	0	0
15—WP	0	0	0	0	0	0	0	0	0	0
16—DN	9	8	12	13	14	16	4	14	16	22
17—DP	0	0	0	0	0	0	0	0	0	0
18—DP	0	0	0	0	0	0	0	0	0	0

2636 **Test 4 — Bacterial suspension used had a plate count of 1,340,000 per ml.**

19 — WN	102	125	164	206	224	240	265	274	281	420
20 — WP	0	0	0	0	0	0	0	0	0	0
21 — WP	0	0	0	0	0	0	0	0	0	0
22 — DN	3	6	7	8	9	9	14	18	21	31
23 — DP	0	0	0	0	0	0	0	0	0	0
24 — DP	0	0	0	0	0	0	0	0	0	0

Test 5. Bacterial suspension used had a plate count of 320,000,000 per ml.

25 — WN	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
26 — WP	4	11	12	10	14	15	16	18	20	24

Bacterial suspension used had a plate count of 3,200,000 per ml.

27 — WP	0	0	0	0	0	0	0	0	0	1
28 — WP	0	0	0	0	0	0	0	0	0	0

Bacterial suspension used had a plate count of 32,000 per ml.

29 — WP	0	0	0	0	0	0	0	0	0	0
30 — WP	0	0	0	0	0	0	0	0	0	0

2637 **PLAINTIFF'S EXHIBIT NO. 52.**

Table 7. Contamination of Milk by Pure-Pak Machine When Practically Sterile Milk Was Bottled. Colonies per ml. on duplicate plates.

First Test		Second Test	
Boiled milk	2 — 6	Boiled milk	
Put in reservoir	6 — 8	Can 1	5 — 2
1st bottle	66 — 58	Can 2	2 — 2
2nd bottle	25 — 27	Can 3	1 — 4
3rd bottle	16 — 17	Can 4	1 — 3
4th bottle	4 — 15	Mixed in reservoir	7 — 3
5th bottle	16 — 17	Left cylinder	33 — 44
6th bottle	8 — 15	Right cylinder	30 — 29
7th bottle	10 — 14	1st bottle	49 — 40
8th bottle	10 — 8	2nd bottle	5 — 8
9th bottle	.....	3rd bottle	8 — 5
10th bottle	8 — 10	4th bottle	8 — 7
11th bottle	13 — 10	5th bottle	7 — 5
12th bottle	7 — 12	6th bottle	11 — 11
13th bottle	.....	7th bottle	6 — 6
14th bottle	10 — 6	8th bottle	4 — 8
15th bottle	4 — 14	9th bottle	8 — 4
16th bottle	8 — 8	10th bottle	7 — 7
17th bottle	9 — 13	11th bottle	5 — 0
18th bottle	13 — 16	12th bottle	9 — 4
19th bottle	13 — 18	13th bottle	11 — 11
		14th bottle	5 — 10
		15th bottle	3 — 4
		16th bottle	7 — 10
		17th bottle	10 — 20
		18th bottle	6 — 10
		19th bottle	7 — 8
		20th bottle	16 — 15
		21st bottle	19 — 12

2638 PLAINTIFF'S EXHIBIT NO. 53.

Number of Bacteria Enmeshed in the Paper Used for Dairy Products.

Description of the paper or container	Number of bacteria per gram
1. Bottle cap used on glass bottles	200
2. Bottle cap used on glass bottles	120
3. Bottle cap used on glass bottles	500
4. Bottle cap used on glass bottles	50
5. Bottle cap used on glass bottles	80
6. Bottle cap used on glass bottles	140
7. Bottle cap used on glass bottles	400
8. Bottle cap used on glass bottles	220
9. Bottle cap used on glass bottles	150
10. Bottle cap used on glass bottles	200
11. Bottle cap used on glass bottles	80
12. Bottle cap used on glass bottles	110
13. KUP parchment butter paper—5½ x 6½	80
14. KUP parchment butter paper—5½ x 6½	130
15. KUP vegetable parchment butter paper—5½ x 6½	60
16. KUP vegetable parchment butter paper—8 x 11	20
17. Parchment paper used for cream cans—11 x 11	210
18. Parchment paper used for cream cans—11 x 11	80
19. Individual Dixie cups	110
20. Individual Dixie cups	60
21. Individual Dixie cups	30
22. Individual Dixie cups	60
23. Ice Cream containers, pint size	80
24. Ice Cream containers, pint size	120
25. Ice Cream containers, pint size	110
26. Ice Cream containers, pint size	80
27. Ice Cream containers, pint size	50
28. Ice Cream cups, ¼ pint	120
29. Ice Cream cups, ¼ pint	70
30. Ice Cream quarts	200
31. Ice Cream pails	90
32. Ice Cream pails	30
33. Ice Cream pails	20
34. Ice Cream pails	90
35. Cheese containers, 6 oz.	30
36. Cheese containers, 6 oz.	30
37. Cottage Cheese container	200
38. Cottage Cheese container	80
39. Cottage Cheese, 6 oz.	10
40. Cottage Cheese, 6 oz.	20
41. Cottage Cheese, 12 oz.	12
42. Cottage Cheese, 12 oz.	50
43. Butter carton	1500

The samples were cut out with sterile knife from the walls and bottoms of the containers. They were reduced to pulp and the mixture of pulp & water was plated.

2639 **PLAINTIFF'S EXHIBIT NO. 54.**

Table 3. Bacteriological Condition of Paper Milk Containers Before Being Paraffined.

No. of Colonies on Duplicate Plates.

1.	0-0	27.	0-1	53.	1-1	79.	1-2	105.	3-4
2.	0-0	28.	0-1	54.	1-1	80.	1-2	106.	3-4
3.	0-0	29.	0-1	55.	1-1	81.	0-3	107.	3-5
4.	0-0	30.	0-1	56.	1-1	82.	0-3	108.	2-6
5.	0-0	31.	0-1	57.	1-1	83.	0-3	109.	4-5
6.	0-0	32.	0-1	58.	1-1	84.	0-3	110.	4-5
7.	0-0	33.	0-1	59.	1-1	85.	2-2	111.	4-5
8.	0-0	34.	0-1	60.	1-1	86.	2-2	112.	4-5
9.	0-0	35.	0-1	61.	0-2	87.	2-2	113.	5-5
10.	0-0	36.	0-1	62.	0-2	88.	2-2	114.	4-6
11.	0-0	37.	0-1	63.	0-2	89.	1-3	115.	4-6
12.	0-0	38.	0-1	64.	0-2	90.	0-4	116.	3-7
13.	0-0	39.	0-1	65.	0-2	91.	0-4	117.	5-8
14.	0-0	40.	0-1	66.	0-2	92.	0-4	118.	5-8
15.	0-0	41.	0-1	67.	1-2	93.	2-3	119.	5-8
16.	0-0	42.	0-1	68.	1-2	94.	2-3	120.	8-8
17.	0-0	43.	0-1	69.	1-2	95.	2-3	121.	8-9
18.	0-0	44.	0-1	70.	1-2	96.	2-3	122.	8-10
19.	0-0	45.	0-1	71.	1-2	97.	2-3	123.	9-10
20.	0-0	46.	0-1	72.	1-2	98.	2-3	124.	9-11
21.	0-0	47.	0-1	73.	1-2	99.	1-4	125.	9-13
22.	0-0	48.	0-1	74.	1-2	100.	3-3	126.	11-15
23.	0-0	49.	0-1	75.	1-2	101.	2-4	127.	13-15
24.	0-0	50.	0-1	76.	1-2	102.	2-4	128.	17-19
25.	0-0	51.	1-1	77.	1-2	103.	1-5		
26.	0-1	52.	1-1	78.	1-2	104.	1-5		

2640 **PLAINTIFF'S EXHIBIT NO. 55.**

Table 12—Bacterial Contamination of Milk by the Pouring Lips of Glass Bottles.

The pouring lip and the outside of the bottles were contaminated with B. prodigiosus culture and the bottles were then opened and three samples of milk were taken:

Sample 1—the very first stream of milk.

Sample 2—after ¼ of the bottle poured out.

Sample 3—the last of the milk poured out.

Practically sterile milk was used so that 1 ml. of the milk was put in each of 2 plates.

Abbreviations:

— no red colonies.
+ one or more red colonies—few at most.
++ numerous red colonies.

Test 1. Controls—3 bottles not contaminated, opened with sterile hand.

No. of bottle	First pouring	Second pouring	Third pouring
1	— —	— —	— —
2	— —	— —	— —
3	— —	— —	— —

Test 2. 6 bottles opened with contaminated hands, pouring lip was not touched.

1	— —	+ —	— —
2	— —	— —	— —
3	— —	— —	— —
4	+ +	— —	— —
5	+ +	+ +	+ +
6	— —	— —	— —

Test 3. 6 bottles opened with contaminated hands. Outside pouring lip touched, not the inside of it.

1	+ +	+ +	+ +
2	+ +	+ +	+ +
3	+ +	+ +	+ +
4	+ +	+ +	+ +
5	+ +	+ +	+ +
6	+ +	+ +	+ +

2641 **Test 4. 6 bottles were opened with contaminated hands, inside pouring lip touches.**

No. of bottle	First pouring	Second pouring	Third pouring
1	+ +	+ +	+ +
2	+ +	+ +	+ +
3	+ +	+ +	+ +
4	+ +	+ +	+ +
5	+ +	+ +	+ +
6	+ +	+ +	+ +

Test 5. 2 glass bottles of milk, one with certified milk hood were submerged for 24 hours in a B. prodigiosus suspension which had a plate count of 30,000,000 per ml. Then the bottles were taken out, allowed to dry, and samples of milk were both poured out and pipetted.

No. of bottle	First pouring	Second pouring	Third pouring	Removed with pipet
1	+ +	+ +	+ +	+
2	+ +	+ +	+ +	+ +

2642 **PLAINTIFF'S EXHIBIT NO. 56.**

Table 10. Number of Bacteria on and in Paper For Pure-Pak Container. Pouring Lip.

The plaques 2.7 grams were cut out of the unparaffined container in such a manner as to include a part of the pouring lip.

The plaques were reduced to pulp in 200 ml. of water and 2 ml. of the mixture was put in each of 9 plates.

Sample No.	Bacteria per Gram
1	0
2	18
3	18
4	33
5	26
6	18

2643 **PLAINTIFF'S EXHIBIT NO. 57.**

Table 11. Bacterial Contamination of Milk by the Pouring Lip of Pure-Pak Containers.

Test 1. Four plates were poured from each of 20 containers.

No. of container	No. of colonies on each of 4 plates			
	1	2	3	4
1	0	0	0	0
2	0	0		
3	0	0	0	1
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0

Test 2. Two containers opened with contaminated hands.

1	0	0	0	0
2	0	0	0	0

Test 3. Two containers opened with clean hands in usual manner.

1	0	0	0	0
2	0	0	0	0

Test 4. Four containers were submerged in B. prodigiosus suspension having plate count of 15,000,000 per ml.—24 hours at 70° F.

1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0

2644 Test 5. Four containers were submerged in similar B. prodigiosus suspension 24 hours at 40° F.

1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0

Test 6. Four containers were submerged in similar B. prodigiosus suspension for 48 hours at 40° F.

1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0

Test 7. Four containers were completely submerged in B. prodigiosus at 40° F. 1 and 2 for 24 hours and 3 and 4 for 48 hours.

1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0

2645 **PLAINTIFF'S EXHIBIT NO. 58.**

Table 17. Showing the effect of paraffining on bacteria when the containers were inoculated before paraffining.

Method of inoculation—The operator dipped his hands in the suspension and rubbed the surfaces of the containers.

No. of test	No. of containers treated	160°F. N—P	170°F. N—P	180°F. N—P	185°F. N—P	190°F. N—P	200°F. N—P	No. of bacteria per ml. in suspension
1	300	91-9	99-1	98-2				250,000,000
2	300	100-0	100-0	100-0				2,500,000
3	300	91-9	99-1	100-0				50,000,000,000
4	400		97-3	96-4		91-9	98-2	120,000,000
5	600			200-0	200-0	200-0		200,000,000

Method of inoculation—The operator dipped his hands in the suspension and just handled the containers as is normally done in feeding the machine.

6	300		100-0	100-0		100-0		100,000,000
7	300		100-0	100-0		100-0		100,000,000
8	600		200-0	200-0		199-1		200,000,000

N = No. bacteria found.
P = Number of colonies that developed in the containers.

2646 **PLAINTIFF'S EXHIBIT NO. 59.**

Table:—Bacterial counts of 50 glass bottles and 50 Pure-Pak containers.

Glass bottles were taken at Ogden Dairy, Chicago, July, 1939.

Paper containers came from Fieldcrest Dairy, Chemung, Ill.

Glass bottles were taken as they traveled from the bottle washer to be filled with milk. One bottle was taken every 5 minutes—and plates were made within 5 minutes.

	Quart Size Pure-Pak	Quart Size Glass
1 bottle had bacteria count of	1250	8300
2 bottles " " " "	100	7200
3 " " " " "	100	5400
4 " " " " "	100	3400
5 " " " " "	50	2400
6 " " " " "	50	1200
7 " " " " "	50	1200
8 " " " " "	50	1200
9 " " " " "	50	1200
10 " " " " "	50	1200
11 " " " " "	50	900
12 " " " " "	50	900
13 " " " " "	50	900
14 " " " " "	0	900
15 " " " " "	0	800
16 " " " " "	0	800
17 " " " " "	0	700
18 " " " " "	0	700
19 " " " " "	0	600
20 " " " " "	0	600
21 " " " " "	0	600
22 " " " " "	0	600
23 " " " " "	0	600
24 " " " " "	0	600
25 " " " " "	0	500
26 " " " " "	0	500
27 " " " " "	0	500
28 " " " " "	0	500

		Quart Size Pure-Pak	Quart Size Glass
29	" " " " "	0	400
30	" " " " "	0	400
31	" " " " "	0	400
32	" " " " "	0	400
33	" " " " "	0	400
34	" " " " "	0	400
35	" " " " "	0	300
36	" " " " "	0	300
37	" " " " "	0	300
38	" " " " "	0	300
39	" " " " "	0	300
40	" " " " "	0	300
41	" " " " "	0	200
42	" " " " "	0	200
43	" " " " "	0	200
44	" " " " "	0	200
45	" " " " "	0	200
46	" " " " "	0	200
47	" " " " "	0	100
48	" " " " "	0	100
49	" " " " "	0	100
50	" " " " "	0	0

2647 PLAINTIFF'S EXHIBIT NO. 60.

Table 24. Bacterial Condition of Adhesives Used in Pure-Pak Containers.

No. of colonies on 5 plates; dilution 1/10.

Sample	Plates 1	2	3	4	5	Per Gram
1	0	0	3	2	3	16
2	0	0	0	0	0	0
3	1	2	0	0	1	8
4	2	0	0	0	0	4
5	0	1	0	1	1	6
6	0	0	0	0	1	2
7	1	0	1	1	1	8

2648 **PLAINTIFF'S EXHIBIT NO. 61.**

FEDERAL SECURITY AGENCY
U. S. Public Health Service
Washington

(Cut)

In Replying
Address the Surgeon General
U. S. Public Health Service
Sanitation Section
D. Q. Division

September 12, 1939

Mr. Owen Rall
Eckert & Peterson
135 South LaSalle Street
Chicago, Illinois

Dear Mr. Rall:

Receipt is acknowledged of your communication of September 8 with regard to regulations governing the manufacture and use of single-service containers for milk.

There is attached a copy of the regulations governing the manufacture, packing, transportation, and handling of single-service containers, milk bottle caps, and covers, as adopted by the Public Health Service Sanitation Advisory Board at its June, 1939 meeting.

The above regulations will appear in the forthcoming printed 1939 edition of the milk ordinance and code recommended by the Public Health Service for adoption by States and communities, which is expected to become available within the next two months. The printed 1939 edition will supersede and will contain some changes from the mimeographed 1939 edition, copy of which is enclosed.

Very truly yours,

A. W. Fuchs
A. W. Fuchs
Senior Sanitary Engineer for Chief,
Sanitation Section.

Enc.
WND:hb
CC: City Health Officer
CC: State Health Officer
CC: Dr. Haskell
Rec'd Sep 14 1939

2649 PLAINTIFF'S EXHIBIT NO. 61.

U. S. PUBLIC HEALTH SERVICE

Washington

(Cut)

In Replying
Address the Surgeon General
U. S. Public Health Service
Sanitation Section
D. Q. Division

June 27, 1939

Public Health Service Sanitation Advisory Board Action on Single-Service Containers, Etc. at June 1939 Meeting.

The following sentence is to be added to items 10p and 12r of the forthcoming 1939 printed edition of the Public Health Service Milk Ordinance:

"The manufacture, packing, transportation, and handling of single-service containers and container caps and covers shall be conducted in a sanitary manner."

The following paragraph is to be added to Public Health Reason under items 10p and 12r:

"Single-service containers, etc. which have not been manufactured and handled in a sanitary manner may contaminate the milk."

The following material is to be added under Satisfactory Compliance of items 10p and 12r:

"(5) The manufacture, packing, transportation and handling of single-service containers and container caps and covers are conducted in accordance with the following requirements. Inspections required herein may be made by the health officer or by any agency authorized by him.

(a) The buildings and rooms in which single-service containers and container caps and covers are manufactured, packed, stored, and handled shall be clean, well lighted and ventilated, and free of dust and flies, as prescribed in items 1p, 2p, 3p, 4p, 6p, 7p, 8p, and 11p.

(b) The average bacterial plate count of the stock from which single-service containers and container caps and covers are made shall not exceed 100 colonies per gram. No substance shall be present in finished single-service

containers and container caps and covers which is toxic.

2650 (c) All operations at the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13p, 14p, and 15p.

(d) All of those parts of machinery and equipment with which the article being manufactured comes in contact shall be kept clean.

(e) All single-service containers and container caps and covers shall be so treated as to be as impervious to milk and milk products as practicable.

The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a non-absorbent non-flaking surface.

(f) All single-service containers and container caps and covers shall prior to use be given bactericidal treatment equivalent to contact with paraffin for at least 30 seconds or at least 180° F.* in approved equipment operated in an approved manner. The bactericidal treatment equipment shall be provided with approved indicating and recording thermometers, and shall be so designed as automatically to insure the required temperature and contact time.

2651 PLAINTIFF'S EXHIBIT NO. 62.

Journal of Milk Technology

Sanitary Aspects of Paper Milk Containers*

M. J. Prucha
University of Illinois, Urbana, Illinois

The bottling of fluid milk in paper containers is not a new idea. In a book by Kenelm Winslow, entitled "Production and Handling of Clae Milk," published in 1909, the following statement appears on page 140: "The latest

* This time-temperature subject to change as a result of further studies being conducted by National Institute of Health.

* Read before the Twenty-sixth Annual Meeting of the International Association of Milk Sanitarians, Louisville, Ky., October 11-13, 1937.

departure in the way of a milk bottle is the single service milk container of pulp wood invented and made by G. W. Maxwell of 1201 Falsom Street, San Francisco, California. It is now in actual use by dairymen in Los Angeles, California."

While the paper milk container was invented some thirty years ago, very little attention was paid to it by the fluid milk industry or by the milk sanitarians. It is only within the last few years that the paper milk container has forced its way into the fluid milk industry and to the attention of the milk sanitarians.

The paper milk container brings with it new problems, economic, practical, and sanitary.

As a result of demand for information concerning the paper milk container, a study on the subject was undertaken by the Dairy Department, University of Illinois. This paper is a progress report on some sanitary problems connected with the use of paper containers for fluid milk.

There are on the market at present at least five different types of paper milk containers. The study reported here was carried on specially with the Pure-Pak milk container. In the case of this container, the paper (after it is made in the paper mill) is packed in large bundles and is shipped to the carton manufacturing company. Here the container is cut out, printed, and sealed along its long edge. It is packed and shipped to the dairy plant in a collapsed condition. In the milk plant the containers are fed into the Pure-Pak machine, made by the Ex-Cell-O Corporation of Detroit, Michigan. The container enters the machine at one end in its collapsed condition and comes out at the other end filled with milk and sealed. As it passes through the machine the container is formed, its bottom is sealed, it is dipped in hot paraffin, passed through a cooling chamber, filled with milk, and finally it is sealed and dated.

A paper mill requires a great deal of water so every mill is located by some abundant body of water—it may be lake, river or well. The spruce tree trunks are first washed and cleaned of bits of bark. As they pass from the washing machine to the cutter they are sorted, as only sound and free-from-bark-and-knots logs are acceptable. The logs are cut into ¾ inch chips. The chips are sorted as they pass on their way to the cooker. The cooking solution is made from sulphur and lime. The wood chips are cooked

in large steel cylinders, lined with brick, for about 15 to 20 hours at a temperature of 120° C. or above.

The digested wood pulp is dumped into large vats where it is washed with fresh filtered water. From here the pulp passes over screens and continues to be washed and cleaned of bits of knots. When in desired condition the pulp passes into large white-tile lined tanks where it is bleached. The bleached pulp passes into another series of tiled tanks where it is again washed, to remove the excess of chlorine and bleaching residue.

At this stage an emulsion of partly saponified rosin and paper makers alum ($Al_2(SO_4)_3 \cdot 18H_2O$ is added. The pulp then is pumped to a Jordan engine and then it passes to the paper machine vat. From here the pulp is picked out by revolving cylinders covered with fine mesh wire cloth. Layers of the pulp adhering to the cylinder are then carried on and pass over a large number—about 30—of large steel cylinders. These cylinders are heated with steam at about 15 pounds guage pressure. As the pulp—paper—comes off the last cylinder it is dry and hot, the water being evaporated from it; or rather it "boiled off" as the pulp passed over the hot cylinders. The paper is cut in suitable sheets and packed.

In the sulphite process of preparing pulp, the treatment is such that pulp is made practically sterile in three places. First in the steam digesting cylinders, the pulp comes out absolutely sterile. During the washing process it becomes contaminated by the water and equipment. In the bleaching vat it is again sterilized. It again becomes contaminated by the water as it is washed and diluted. The size also adds a few bacteria. As the pulp enters the paper machine and passes over the steam rollers it again is at least partially sterilized.

The bacteriological examination showed the pulp to be sterile in the bleaching vats. After it was washed, diluted, and treated with size, it gave a bacterial plate count of 400. As the diluted pulp entered the wire screen the count was 40. Two by two inch strips of paper, taken as they left the hot rollers, placed in 100 ml. of sterile water, and after shaking, plated, gave no colonies on 1 ml. plates. In other words, the paper was practically sterile on its surface.

Milk sanitarians should inspect paper mills and check on the pulp. In the first place, the water used for diluting the pulp usually comes from polluted streams or lakes.

Some paper mills have proper sanitary control over the water supply while other paper mills have not.

In the suggested standards for paper as printed in The Milk Sanitarian, Volume 6, pages 11-13, it is suggested that paper milk containers be made from virgin chemical or mechanical pulp and that prior to moisture-proofing the paper shall not have a count exceeding 500 colonies per gram of the disintegrated paper. Such a standard is extremely liberal. A quart paper container when dry weighs about 42 grams. A container made from such paper would harbor 21,000 in its walls.

When paper is made by the sulphite process and is bleached and is made in a continuous operation—that is, not stored in moist condition for some days—the bac-
2652 terial population of the paper is extremely low. A number of containers were beaten in a small glass churn until reduced to pulp. About 1500 ml. of sterile water were used for one container. Ten plates were poured, one ml. in each. Five plates had no colonies, two plates had one colony each, and three plates had two colonies each. Such counts mean practically nothing, except that the paper was practically sterile. In another test, twenty quart containers were broken up and jammed into a three-gallon milk can containing six liters of sterile water. After soaking for 20 minutes and shaking vigorously, one ml. of the water was plated in each plate. After two and one-half hours of soaking another set of plates was made. Again the plates gave counts of one or two colonies or none. The calculations from such counts gave 2.3 bacteria per square inch of surface.

Where paper is made for milk containers some medical examination of the worker handling and packing the paper should be required. Some mills have such standards. Occasional inspection of the premises and of the bundles of the paper are desirable. The Chicago Carton Company, where the containers are cut and printed, was found in an excellent sanitary condition. If paper containers become extensively used, such an establishment should be visited and inspected by milk sanitarians.

So far in our study, most of the experiments have been carried on with the Pure-Pak paper container. As stated already, the containers are shipped to the milk plant from the carton company and are paraffined by the machine at

the milk plant. The machine is set as to time but the temperature of the paraffin can be set as desired.

The bacteriological condition of the paraffined containers was determined at first by the standard methods recommendations. The containers were passed through the machine and were sealed, but no milk was put into them. At the laboratory they were opened, one hundred ml. of sterile water were poured in and after a thorough shaking, two plates—each containing one ml. of the rinse water—were plated. Most of these empty bottles were collected during two months, in which time the machine was used for bottling milk. Each day the first six bottles passing through the machine and also the last six after the milk was bottled, were taken for the test. Space does not permit the giving of the counts of individual containers, of which several hundred were examined. Most of the plates had one, sometimes two, and more often no colonies. The results forced us to the conclusion that the containers were practically sterile and that the standard method is no good for this purpose.

The following method was adopted after this. About 25-30 ml. of nutrient agar were poured directly into the container. After some agitation to bring all the surface in contact with the agar, the containers were incubated. To count the colonies the container was cut open and the slab of agar was placed on the counting glass, and the colonies were counted.

One hundred and ten bottles paraffined at 170° F. had all together 100 colonies; ninety-three containers paraffined at 180° F. had 49 colonies; ninety-eight containers paraffined at 185° F. had 29 colonies; and ninety-five containers paraffined at 190° F. had 53 colonies. Part of the time the standard agar plus one per cent lactose was used as nutrient agar and most of the time the tryptone dextrose agar was used. The conclusion drawn from these tests is that when sulphite-process bleached pulp is used for the paper, it is practically sterile, and when the containers are paraffined they also are practically sterile. It made no difference whether they were paraffined at 170, 180 or 190 degrees F.

Another group of 1,000 bottles from a different source was examined. The results of that examination were very similar. In this group of containers 45 percent of them developed no colonies, 38 percent of them had spreaders—

that is, spore producers—and 25 percent of the containers had paper defects. Of those with paper defects, 71 percent harbored spreaders. In Table I are given the colony

Table I

Twelve Worst Containers Among 1000 Examined

Number	Total Count	Spreader	Defects in Paper
1	309	+	+
2	150	+	—
3	126	+	—
4	118	+	+
5	111	+	+
6	110	+	+
7	99	+	+
8	67	+	+
9	64	+	+
10	63	+	—
11	54	+	+
12	49	+	+

+ Present — absent

counts of the twelve worst containers and the presence of spreaders and paper defects is indicated. The paper defects manifested themselves as brownish patches in the paper under the paraffin and appeared to be caused by some hydrolytic change in the pulp.

Taken as a whole, as far as can be determined, the paper milk containers after they are paraffined are practically free from bacteria.

The paraffining of the containers is done primarily for the purpose of making the paper impervious to the milk. Since paraffining must be done at relatively high temperature the process also involves a bactericidal treatment.

This phase of the study had been conducted both in the milk plant and in the laboratory. For this purpose the containers were impregnated with a bacterial suspension of a given organism. For the most part a variety of B. prodigiosus was used. In the first part of this study the containers were dipped in a bacterial suspension usually having about 200,000,000 plate count. In dipping the containers they absorbed on the average about seven ml. of

the suspension. As soon as the containers were dry enough they were paraffined. To test for the presence of the organisms, about 30 ml. of nutrient agar were poured into each container and thoroughly shaken, then incubated. Many hundreds of containers were treated in this manner. The temperatures of 160, 170, 175, 180, 185 and 190 degrees F. were tried. Very irregular results were obtained. While most of the containers were free from the organism, invariably there would be a few containers in which the organisms were present. This was true of all the temperatures.

In one experiment the suspension had only 2,000,000 bacteria per ml. Of the three hundred bottles paraffined at 170°, 180° and 190° F. none had any of the bacteria present.

2653 The dipping of the paper containers in a suspension containing so many bacteria was discontinued. Instead of dipping, the containers were inoculated by putting one's hand in the suspension and then rubbing the inside walls of the containers with the hand. In one run six hundred containers were inoculated in this manner and were paraffined at 160°, 170° and 180° F.

Of the two hundred bottles paraffined at 160° F., nine were positive, of those paraffined at 170° F., one was positive, and of those paraffined at 180° F., two were positive.

Another method of inoculating the containers was tried. The operator handling the containers from the cartons in which they were shipped to the paraffining machine infected his hands in the bacterial suspension and then handled the containers. In one test, six hundred containers were paraffined, after being handled in this manner: two hundred at each of 170°, 180° and 190° F. All the containers paraffined at 170° F. and at 180° F. were negative. Of the two hundred containers paraffined at 190° F., one hundred and ninety-nine were negative and one was positive.

In these tests in which inoculated containers were paraffined, and a large number of these were paraffined in each test, invariably one or two containers would be positive, and that was irrespective of the temperature used. Whether the bacteria survived the paraffining or whether in handling such rich suspension an occasional accidental contamination took place, it is difficult to conclude. The heavier the inoculation the more positive cases appeared.

The study of paraffining the paper was also carried on

at the laboratory. Here small strips of paper, ½ by 2½ inches, were used. After the strips of paper were paraffined they were dropped in a test tube containing 15 percent milk and 85 percent water. After incubation of several days they were examined for the appearance of color. The results from one of the runs, given in Table II, are typical. In Table III, results are given from one of

Table II

Survival of B. prodigiosus on Paper Strips ½" x 2½". Strips Dipped in Bacterial Suspension of 20,000,000 Cells Per Ml.

Seconds Exposed	10	20	30	45	60
160° F.	+ + +	+ + +	+ + −	+ + +	+ + +
	+ + +	+ + +	+ + −	− − −	+ − −
170° F.	+ + +	+ + −	+ + −	− − −	− − −
	+ + +	+ + +	+ + −	− − −	− − −
180° F.	− + +	+ + +	− − −	− − −	− − −
	+ − −	+ − −	− − −	− − −	− − −
190° F.	+ + −	− − −	− − −	− − −	− − −
	− − −	− + −	− − −	− − −	− − −
200° F.	+ − −	− − +	− − −	− − −	− − −
	− − −	− + −	− − −	− − −	− − −
212° F.	+ + −	− − −	− − −	− − −	− − −
	− − −	− − −	− − −	− − −	− − −

\+ Bacteria survived.
− None found.

Table III

Killing of B. coli on Paper by Dipping Inoculated Strips of Paper in Hot Water. Each Strip ½" x 2½" Received 5,000,000 Bacteria.

Exposure Seconds	130° F.	140° F.	145° F.	150° F.
10	+ + +	+ + +	+ + +	− − −
	+ + +	+ + +	+ + +	− − −
20	+ + +	+ + +	− + +	− − −
	+ + +	+ + +	+ + +	− − −
30	+ + +	+ + +	+ − +	− − −
	+ + +	+ + +	− + −	− − −
45	+ + +	+ + −	− − −	− − −
	+ + +	+ + +	− − −	− − −
60	+ + +	− − +	− − −	− − −
	+ + +	+ + −	− − −	− − −

the runs in which the inoculated strips of paper were exposed to sterile hot water instead of paraffin. The results show that the hot water treatment is more effective than the paraffin treatment. The difference is very pronounced. Water at 150° F. is more effective than paraffin at 190° F.

Tests were also made to determine how long the bacteria will survive on the impregnated strips of paper. Heavily inoculated strips of paraffined paper were examined daily. No living bacteria were found on the strips after the seventh day. When the unparaffined paper strips were inoculated and examined in the same manner no viable bacteria were present after the sixth day.

The tentative standards suggested in the report from the conference on paper milk containers are good. Perhaps they should be somewhat more exacting. The milk sanitarians should inspect and develop some score card for the mill where the paper is made. Health certificates of the employees handling the paper should also be made. Health certificates of the employees handling the paper should also be required, both in the paper mill, in the carton manufacturing company, and also in the milk plant wherever the milk containers are handled by hands. Inspection of the paper containers at the milk plant is necessary not only as to bacterial condition but as to appearance. The containers that are paraffined in a factory and shipped, ready to be filled, need to be well packed and protected in the shipment and at the milk plant. Also a proper storage room, free from insects and vermin and dust, must be provided at the plant.

Paraffining the containers at 185° F. for 30 seconds, when the containers are protected as above suggested, will result in a practically sterile container, and a container that is safe to use. However, entire dependence on paraffining to insure complete sterility of the container may not be sufficient.

2654 **PLAINTIFF'S EXHIBIT NO. 63.**

Are Paper Milk Containers Sanitary?

M. J. Prucha
Department of Dairy Husbandry
University of Illinois
Urbana, Illinois

"Are paper milk containers sanitary?" This question is of the same type as the one asked of a married man, "Have you ceased beating your wife? Answer yes or no." If the question of this paper reads, "Can paper milk containers be made so that they are sanitary?" then I can answer "Yes" without any hesitation.

Certain studies on this question have been carried on in our laboratories for the last twenty months. It is the purpose of this paper to present some of the results of this study to prove the above answer, namely, that paper milk containers can be made so that they are sanitary.

At this point it will be desirable to define a "sanitary container." While there will probably be differences of opinion among milk sanitarians, we offer the following definition: A sanitary container is one that is clean, free from visible dirt, that is protected against the contamination of harmful microorganisms, especially the disease-producing organisms, and that has as few bacteria of the harmless miscellaneous types as possible.

In the usual examinations of containers, such as glass milk bottles, attention is paid to the cleanness of the containers and then they are examined bacteriologically for the total number of bacteria. A hunt for disease bacteria is not attempted in the routine examination. We depend on preventive measures to keep the disease-producing bacteria out of the containers.

Our bacteriological study has dealt primarily with the number of bacteria in the paper milk containers at the different stages of their manufacture, and to some extent, observations were also made as to kind of bacteria.

Number of Bacteria in the Paper Board from Which Milk Containers Are Made

It has been felt by some sanitarians that the number of bacteria enmeshed in the paper board is an indication of its sanitary condition. In Table 1 are given results from

70 examinations of paper board coming from five different paper mills. Sixty-six of the 70 samples had some bacteria, ranging from 3 to 7,493 per gram of the paper. Four samples gave no growth on petri dishes.

2655 From these tests it is evident that paper can be made which is practically free from bacteria of any kind. Virgin pulp, freshly bleached and diluted with properly chlorinated water will give paper board practically free from bacteria.

The bacteria that are usually found enmeshed in the paper board are almost exclusively spore-producing organisms. According to J. R. Sanborn (1), B. sublitis, B. cereus, B. mycoides, B. tumescens, B. megatherium are the usual organisms found. Non-spore forming organisms are found only occasionally. These may be due to subsequent contamination, after the paper is made. The process of paper making is such that the paper is exposed to very hot steel rollers. Experiments conducted by E. Wheaton (2), showed that non-spore bearing organisms do not survive on the paper when the paper is inoculated heavily before it passes over the hot rollers.

Another point of sanitary importance regarding the paper board is the fact that the non-spore bearing organisms do not remain viable very long on the paper. In Table 2 are given results from one of the tests. In these tests plaques of paper were heavily inoculated by being dipped in a bacterial suspension, then placed in open petri dishes and kept at room temperature. At intervals they were examined for the presence of the inoculating organisms. Organisms like E. coli and B. prodigiosus usually died in about four days. Staphylococcus aureus remained alive a few days longer. This tendency for the microorganisms to die on the paper might be called "self-purification".

As the paper board leaves the hot rollers it is cut either in sheets of desired size or wound into rolls and sent to the carton factory. Here the containers are designed, cut, printed, and edges sealed with adhesive. In the case of the Canco and the Sealright containers, they are fabricated and paraffined at the carton factory and are shipped to the milk plant ready to be filled with milk and milk products.

The Pure-Pak containers are partly fabricated at the carton factory. Their shaping, the sealing of their bottoms and the paraffining are done at the milk plant. Since the

Pure-Pak machine was installed at the University Creamery an opportunity was afforded to examine the containers after they were shaped and their bottoms sealed and before they were paraffined. One hundred and twenty-eight containers were examined for bacteria. The results are shown in Table 3. In making the examination each container was rinsed with 100 ml. of sterile water and one ml. was plated in each of two plates. No colonies developed on two plates from 25 containers. From another 25 containers only one colony appeared on one of the two plates. Less than 10 colonies developed on the plates from 121 of the 128 containers.

The paper for these containers was handled at the paper mill, was transported to the carton factory, and there the containers were handled, exposed to the air and then transported to the milk plants. Here they were again handled and sealed with an adhesive. The results in Table 3 represent the contamination from all the sources to which
2656 the paper and the containers were exposed as they passed on their journey in the paper mill and from the paper mill to the point at which they were to enter the hot paraffine.

The adhesives that were used were frequently examined. The examination consisted of mixing 10 grams of the adhesive in 100 ml. of sterile water and then pouring 10 plates, each receiving 1 ml. of the mixture. As a rule the plates did not develop any colonies. The adhesives used for sealing these containers, therefore, did not contaminate the containers.

The next step in this study was the examination of the paraffined containers. As already stated, the Pure-Pak containers are paraffined at the milk plant, while the Canco and the Sealright containers are paraffined at the carton factory and are shipped to the milk plant, ready to be filled with milk. All the three types of the containers were examined. In Tables 4, 5 and 6 are presented the results of such examination.

The Pure-Pak containers were examined by rinsing each container with 100 ml. of water and pouring two plates, each containing 1 ml. of the rinse water. The Canco containers were examined by pouring into each container about 20 ml. of agar and leaving the agar in the container. After incubation the colonies were counted. The Sealright containers were examined by rinsing each container with 10 ml. of water and plating all the rinse water in three plates.

The outstanding result of this examination is the fact that in a large percentage of the containers no bacteria were found. Another large percentage of the containers gave so few colonies that it could be interpreted that the occasional colony did not come from the container but was an external contamination. Tanner (3) reports that over 80 per cent of the 7,000 Canco containers examined were found free from bacteria.

Complete elimination of bacteria from dairy utensils is rather difficult to accomplish in the routine operations in the milk plant. This is recognized by the sanitarians. In the Sixth Edition of the Standard Methods for Milk Analysis the following statement appears on page 58: "In testing milk bottles, 100 ml. of sterile water is added to each bottle. After it is vigorously shaken, 1 ml. of the rinse water is transferred to each of two petri dishes and 10 ml. of agar is poured in each petri dish. • • •

"Bottles developing not more than 1 colony per ml. capacity • • • shall be considered satisfactory. While this standard may be so severe that it will not be met in all instances in regions that are just beginning to work in this field, it has been found by experience that properly sterilized containers will meet the standard specified. The counts from poorly sterilized containers (glass bottles) usually greatly exceed this figure. Under these conditions, it is recommended that the enforcement of this standard be lenient at first."

The capacity of quart bottles is 950 ml. Therefore the standard is 950 bacteria per container. Applying this standard to the paper milk containers examined in this study, it is seen that only two Pure-Pak containers out of 395 examined did not meet the standard. Of the 1,155 Canco containers examined, only one did not meet the standard, and of the 226 Sealright containers, 11 did not meet the standard.

2657 S. V. Layson, E. G. Huffer and J. M. Brannon examined 454 glass milk bottles collected from 25 different milk plants. The results are summarized in Table 7. One hundred and eighteen bottles had no bacteria, 126 bottles had between 100 and 1,000 bacteria and 210 had more than 1,000 and hence did not meet the standard. Some of the bottles harbored several million bacteria. These bottles were collected from dairies well established in business and operating under certain regulations. The bottles were picked up at random at the point they were to be

used for milk and were supposed to be cleaned and sterilized.

The above reference to glass bottles should not be construed as a reflection on glass bottles. In properly managed and technically controlled milk plants, the bacterial population in glass bottles can and is effectively controlled.

The results of the bacteriological examination of the paper milk containers are conspicuous for the absence of bacteria in most of the containers and for the absence of coliform organisms. This has been accomplished by the industries involved in the manufacture without any official sanitary regulations. With the establishment of certain requirements it will be possible to make further improvements.

It is hoped that some reasonable sanitary regulations will be agreed upon to guide the industries in the manufacture of the paper board, in the handling of the paper and the containers, in the fabrication of the containers and in the storage and transportation of the containers, so that through preventive measures all danger of contamination by harmful bacteria can be assured, as well as the control and elimination of the non-pathogenic bacteria.

To many milk sanitarians the problem already appears to be practically solved, because some paper milk containers have already been accepted by many Boards of Health and other health agencies as satisfactory milk containers from the sanitary standpoint.

Certain of the milk containers have been approved by the Ministry of Health of Great Britain and the local authorities are also empowered to approve of cartons submitted to them for use both with ordinary milk and milk sold under special designation. Here in the United States the Council on Foods of the American Medical Association has voted to accept milk distributed in the single service type of certain containers. Also the American Association of Medical Milk Commission has approved the closure on the single service paper containers of certain types.

The paper milk containers are here. They are here to stay. To what extent they will be used in the dairy industry will probably be largely determined by economic factors and not by sanitary restrictions.

References

(1) Sanborn, J. R., Suitable Paper Wrappers and Containers for Foods. American Journal of Public Health. Vol. 28. No. 5. 1938.

(2) Wheaton, E. Unpublished data.

(3) Tanner, F. W. Unpublished data.

2658 Table 1.—Number of Bacteria Enmeshed in the Body of the Paper. Bacteria per Gram of Paper

Sample No.	Sample No.	Sample No.
1. 7493	25. 440	49. 63
2. 2570	26. 320	50. 60
3. 2550	27. 253	51. 57
4. 2400	28. 253	52. 33
5. 2350	29. 240	53. 33
6. 2173	30. 203	54. 20
7. 2160	31. 193	55. 20
8. 2070	32. 190	56. 13
9. 2000	33. 183	57. 13
10. 1880	34. 183	58. 10
11. 1833	35. 153	59. 10
12. 1733	36. 137	60. 7
13. 1560	37. 133	61. 7
14. 1490	38. 133	62. 3
15. 1437	39. 123	63. 3
16. 1120	40. 120	64. 3
17. 1000	41. 120	65. 3
18. 720	42. 117	66. 3
19. 680	43. 100	67. 0
20. 560	44. 93	68. 0
21. 560	45. 91	69. 0
22. 560	46. 73	70. 0
23. 560	47. 70	
24. 440	48. 67	

Table 2.—Survival of Viable Bacteria on Paper Board Plaques of paper board heavily inoculated with B. prodigiosus

Freshly inoculated	+ + + / + + +
5 hrs. old	+ + + / + + +
16 " "	+ + + / + + +
28 " "	+ + + / + + +
40 " "	+ + + / + + +
52 " "	+ — — / — — —
87 " "	— — — / — — —
98 " "	— — — / — — —
142 " "	— — — / — — —
161 " "	— — — / — — —

+ viable bacteria survived
— no viable bacteria survived
Each sign + or — represents one plaque

2659 **Table 3. Bacteriological Condition of Paper Milk Containers Before Being Paraffined**

No. of Colonies on Duplicate Plates.				
1. 0-0	27. 0-1	53. 1-1	79. 1-2	105. 3-4
2. 0-0	28. 0-1	54. 1-1	80. 1-2	106. 3-4
3. 0-0	29. 0-1	55. 1-1	81. 0-3	107. 3-5
4. 0-0	30. 0-1	56. 1-1	82. 0-3	108. 2-6
5. 0-0	31. 0-1	57. 1-1	83. 0-3	109. 4-5
6. 0-0	32. 0-1	58. 1-1	84. 0-3	110. 4-5
7. 0-0	33. 0-1	59. 1-1	85. 2-2	111. 4-5
8. 0-0	34. 0-1	60. 1-1	86. 2-2	112. 4-5
9. 0-0	35. 0-1	61. 0-2	87. 2-2	113. 5-5
10. 0-0	36. 0-1	62. 0-2	88. 2-2	114. 4-6
11. 0-0	37. 0-1	63. 0-2	89. 1-3	115. 4-6
12. 0-0	38. 0-1	64. 0-2	90. 0-4	116. 3-7
13. 0-0	39. 0-1	65. 0-2	91. 0-4	117. 5-8
14. 0-0	40. 0-1	66. 0-2	92. 0-4	118. 5-8
15. 0-0	41. 0-1	67. 1-2	93. 2-3	119. 5-8
16. 0-0	42. 0-1	68. 1-2	94. 2-3	120. 8-8
17. 0-0	43. 0-1	69. 1-2	95. 2-3	121. 8-9
18. 0-0	44. 0-1	70. 1-2	96. 2-3	122. 8-10
19. 0-0	45. 0-1	71. 1-2	97. 2-3	123. 9-10
20. 0-0	46. 0-1	72. 1-2	98. 2-3	124. 9-11
21. 0-0	47. 0-1	73. 1-2	99. 1-4	125. 7-13
22. 0-0	48. 0-1	74. 1-2	100. 3-3	126. 11-15
23. 0-0	49. 0-1	75. 1-2	101. 2-4	127. 13-15
24. 0-0	50. 0-1	76. 1-2	102. 2-4	128. 17-19
25. 0-0	51. 1-1	77. 1-2	103. 1-5	
26. 0-1	52. 1-1	78. 1-2	104. 1-5	

Table 4.—Number of Bacteria in Pure-Pak Paraffined Paper Milk Containers

No. of containers	No. of colonies on duplicate plates
99	0–0
110	0–1
76	1–1
56	1–2
33	2–2
13	3–4
1	4–4
3	4–5
1	5–5
3	5–6
1	7–8
1	10–11
1	20–21

2660 Table 5.—Bacterial Condition of 1155 American Can Containers

Number of containers	No. of bacteria in each container
568	No Colony
323	1 "
84	2 "
118	2–10 "
43	10–50 "
11	50–100 "
6	100–200 "
1	309 "
1	1500 "

Table 6.—Bacteriological Condition of Sealright Containers

Number of containers	No. of bacteria in each container
3	0
13	1
10	2
79	2–10
62	10–50
17	50–100
21	100–500
9	500–1000
10	1000+
1	5300

Table 7.—Bacterial Count Found in Glass Bottles (Counts per bottle, not per ml.)

No. of bottles	Bacteria per bottle
118	0
44	100
27	200
25	300–400
30	400–1,000
49	1,000–10,000
58	10,000–100,000
35	100,000–1,000,000
18	1,000,000+

2661 PLAINTIFF'S EXHIBIT 64.

United States of America
The State of (Cut) Michigan

Michigan Corporation and Securities Commission

To All to Whom These Presents Shall Come:

I, Carl A. Olson, Commissioner of the Michigan Corporation and Securities Commission, Do Hereby Certify That Articles of Incorporation of Fieldcrest Dairies, Inc. were duly filed in this office on the 5th day of November A. D., Nineteen Hundred and Thirty-Seven and the said Company is authorized to commence its business in conformity with Act 327, Public Acts of 1931.

In Testimony Whereof, I have hereunto set my hand and affixed the Seal of the Commission in the City of Lansing, this 5th day of November A. D. 1937.

Carl A. Olson,
(Seal) *Commissoner.*

Filed Apr 27 1940 Hoyt King, Clerk.

2662 Articles of Incorporation

of

Fieldcrest Dairies, Inc.

(Company, Corporation or Incorporated)

These Articles of Incorporation are signed and acknowledged by the incorporators for the purpose of forming a corporation for profit under the provisions of Act No. 327 of the Public Acts of 1931, known as the Michigan General Corporation Act, as follows:

Article I.

The name of this corporation is Fieldcrest Dairies, Inc.

Article II.

The purpose or purposes of this corporation are as follows: to buy, sell, deal in, manufacture, process, cut, store and ship cream, milk, butter, cheese, ice-cream, ice-cream mix, sugar, condensed milk, powdered milk, evaporated milk, malted milk, distilled water, milk products and by-products, ice and all such other articles as may be necessary or may be conveniently used in connection with the aforesaid mentioned business or businesses; to own, lease and manage, directly or through subsidiaries, dairies and dairy farms, creameries and cheese factories, and conduct a general manufacturing and merchandising business.

(In general to carry on any business in connection therewith and incident thereto not forbidden by the laws of the State of Michigan and with all the powers conferred upon corporations by the laws of the State of Michigan.)

Article III.

Location of the corporation is Detroit, in the County of Wayne, State of Michigan.

Post Office address of registered office in Michigan is 1611 National Bank Building, Detroit, Mich.

Article IV.

The total authorized capital stock is

(1) Common 2500 shs. Par Value $10.00 per share.

(3) The following is a description of each class of stock of the corporation with the voting powers, preferences and rights and qualifications, limitations or restriction thereof:

Each share of stock shall have equal voting power, and the holders thereof shall be entitled to share, equally and ratably, in all dividends.

2663 The amount of paid in capital with which this corporation will begin business is $1,000.00. (This must not be less than $1,000.00)

Article V.

The names and places of residence or business of each of the incorporators and the number and class of shares subscribed for by each are as follows:

Names	Residence or Business Address	Number of Shares		
		Common	Preferred	Non-Par
Fred Dye	1611 National Bank Bldg. Detroit, Michigan	100	none	none

Article VI.

The names and addresses of the First Board of Directors are as follows:

Name	Address
Fred Dye	1611 National Bank Building, Detroit, Mich.
Edna E. Martin	1611 National Bank Building, Detroit, Mich.
Jarl A. Andeer	1611 National Bank Building, Detroit, Mich.

Article VII.

The term of this corporation is fixed at thirty years.
2664 In Witness Whereof the incorporator has signed these articles of Incorporation this 21st day of October A. D. 1937.

Fred Dye.

State of Michigan }
County of Wayne } ss.

On this 21st day of October A. D. 1937 before me, a Notary Public in and for said County, personally appeared Fred Dye known to me to be the persons named in, and who executed the foregoing instrument, and severally acknowledged that they executed the same freely and for the intents and purposes therein mentioned.

Quin E. Benner
Notary Public for Wayne County, State of Michigan.

My commission expires 2/15/38.

2665 **Original**

(Corporation for Pecuniary Profit)
Articles of Incorporation
of
Fieldcrest Dairies, Inc.
Under Act 327, Public Acts of 1931.

(This blank prepared by Michigan Corporation and Securities Commission.)

Filed Nov 5 1937.

This is to certify these articles of incorporation to be a true copy of the original on file in this office.

Carl Olson
(Seal) *Commissioner*

Michigan Corporation and Securities Commission De troit Office.

Received No. 5, 1937 Michigan Corporation and Securities Commission Detroit Office.

Detroit Office Michigan Corporation and Securities Commission.

Nov. 5, 1937.

H. W. & dr
Compared by

2666 **PLAINTIFF'S EXHIBIT 65.**

Certificate Number 2631

Book 1145 Page 113

State of Illinois
Office of
The Secretary of State
(Cut)

To all to whom these Presents Shall Come, Greeting:

Whereas, Fieldcrest Dairies, Inc., incorporated under the laws of the State of Michigan has filed in the Office of the Secretary of State duly authenticated evidence of its incorporation and an application for Certificate of Authority to transact business in this State, as provided by "The Business Corporation Act" of Illinois in force July 13, A. D. 1933.

Now Therefore, I, Edward J. Hughes, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby issue this Certificate of Authority and attach thereto a copy of the application of the aforesaid corporation.

In Testimony Whereof, Thereto set my hand and cause to be affixed the Great Seal of the State of Illinois.

Done at the City of Springfield this 29th day of November A. D. 1937 and of the Independence of the United States the one hundred and 62nd.

Edward J. Hughes
Secretary of State.

(Seal)

2667 Book 1145 Page 114

Date Paid 11-29-37	
Initial Fee	$ .50
Francise Tax	$ 6.67
Filing Fee	$20.00
Penalty	$
Clerk M S L	

Form J

(To be filed in duplicate)

Application for License of Foreign Corporation

November 24, 1937

To Edward J. Hughes, Secretary of State, Springfield, Illinois:

Fieldcrest Dairies, Inc., a corporation organized and existing under and by virtue of the laws of the State of Michigan desiring admission into the State of Illinois, for the purpose of transacting business or exercising its corporate powers or franchises, hereby makes application for a certificate of authority and submits the following statement pursuant to "The Business Corporation Act," of Illinois.

First—The above corporation was duly incorporated under the laws of the State of on the 5th day of November. A. D. 1937 for a term of 30 years.

Second—The location of the principal office as designated in the charter is Detroit, Michigan. The locations of its principal places of business are Detroit, Michigan, Chicago, Illinois.

Third—The address of the proposed registered office in the State of Illinois will be located at 20 North Wacker Drive, in the city of Chicago, Illinois, and the name of its proposed registered agent in this State at such address is: H. M. Dean.

Fourth—The corporation is transacting business and qualified under the foreign corporation laws of the following states and countries other than Illinois: Detroit, Michigan.

Fifth—The names of its officers and directors and their addresses are as follows:

Name	City and State	Street and No.
President S. E. Dean,	Chicago, Ill.	20 North Wacker Drive
Secretary H. M. Dean,	Chicago, Ill.	20 North Wacker Drive
Director S. H. Dean,	Chicago, Ill.	20 North Wacker Drive
Director A. T. O'Connor,	Chicago, Ill.	20 North Wacker Drive

2668 Book 1145 Page 115

Sixth—The purpose or purposes for which it was organized which it proposes to pursue in the transaction of business in this State is: to buy, sell, deal in, manufacture, process, cut, store and ship cream, milk, butter, cheese, ice cream, ice-cream mix, sugar, condensed milk, powdered milk, evaporated milk, malted milk, distilled water, milk products and by-products, ice and all such other articles as may be necessary or may be conveniently used in connection with the aforesaid mentioned business or businesses; to own, lease and manage, directly or through subsidiaries, dairies and dairy farms, creameries and cheese factories, and conduct a general manufacturing and merchandising business.

2669 Seventh—The number of shares which it has authority to issue, itemized by classes, par value of shares, shares without par value, and series, if any, within a class, is:

Class	Series (if any)	Number of Shares	Par value per share or statement that shares are without par value.
one—common	none	2500	par value $10—

Eighth—The number of its issued shares, itemized by classes, par value of shares, shares without par value, and series, if any, within a class, is:

Class	Series (if any)	Number of Shares	Par value per share or statement that shares are without par value.
one—common	none	100	par value $10—

Ninth—The amount of stated capital and the amount of paid in surplus of the corporation as defined by "The Business Corporation Act" of Illinois, is:

Stated Capital	$1,000.00
Paid in Surplus	none
Total	$1,000.00

*Tenth—Give an estimate of the total value of all the property of the corporation for the following year $1,000.00

Eleventh—Give an estimate of the total value of all the property of the corporation for the following year that will be located in Illinois $1,000.00

Twelfth—State the estimated total business of the corporation to be transacted by it everywhere for the following year $15,000.00

Thirteenth—State the estimated annual business of the corporation to be transacted by it at or from places of business in the State of Illinois $20,000.00

Fourteenth—

Interrogatories:

(a) Is the corporation actually transacting business at the present time in the State where it was organized? NO

(b) From what office will the affairs of the corporation be managed? Chicago, Illinois at 20 North Wacker Drive offices

(c) To what office or offices will all contracts with the corporation be forwarded for final acceptances? Chicago, Illinois

(d) At what office or offices will the directors and stockholders meeting be held? Chicago, Illinois

(e) The number of shares of the capital stock of all classes owned by residents of Illinois is: 100 shares

(f) The number of shares of capital stock of all classes owned by non-residents of Illinois is: no shares

(g) Is the corporation transacting business in this State at this time? no

---

* Property as used in this application shall apply to all property of the corporation, real, personal, tangible, intangible, or mixed without qualification.

(h) If your answer is in the affirmative, state the exact date on which it commenced to transact business in Illinois.

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2670 In Witness Whereof, the undersigned corporation has caused this report to be executed in its name by its acting President attested by its duly elected Secretary, this 24th day of November, A. D. 1937.

Fieldcrest Dairies, Inc.,
(Exact Corporate Title)
By S. E. Dean, Jr.
President.

(Seal)

H. M. Dean
Secretary.

State of Illinois } ss.
County of Cook }

I, William Jacobs a Notary Public, do hereby certify that on the 24th day of November, A. D. 1937, personally appeared before me S. E. Dean, Jr., who declares he is President of the corporation, executing the foregoing document, and being first duly sworn, acknowledged that he signed the foregoing document in the capacity therein set forth and declared that the statements therein contained are true.

In Witness Whereof, I have hereunto set my hand and seal the day and year before written.

William Jacobs
Notary Public.

(Seal)

Endorsement: Form J Box _____ File_____ Foreign Corporations Application for License of Foreign Corporation. Fieldcrest Dairies, Inc. Filed Nov 29 1937 Edward J. Hughes Sec'y of State. Filing Fee $20.00, plus license fee and franchise tax.

2671 NOTICE TO CORPORATIONS

Every incorporated company, other than banking, building and loan, and insurance companies, religious corporations and corporations organized not for pecuniary profit are required to make and file in the office of the Secretary of State in February of each year an annual report and severe penalties are inflicted for failure to do so.

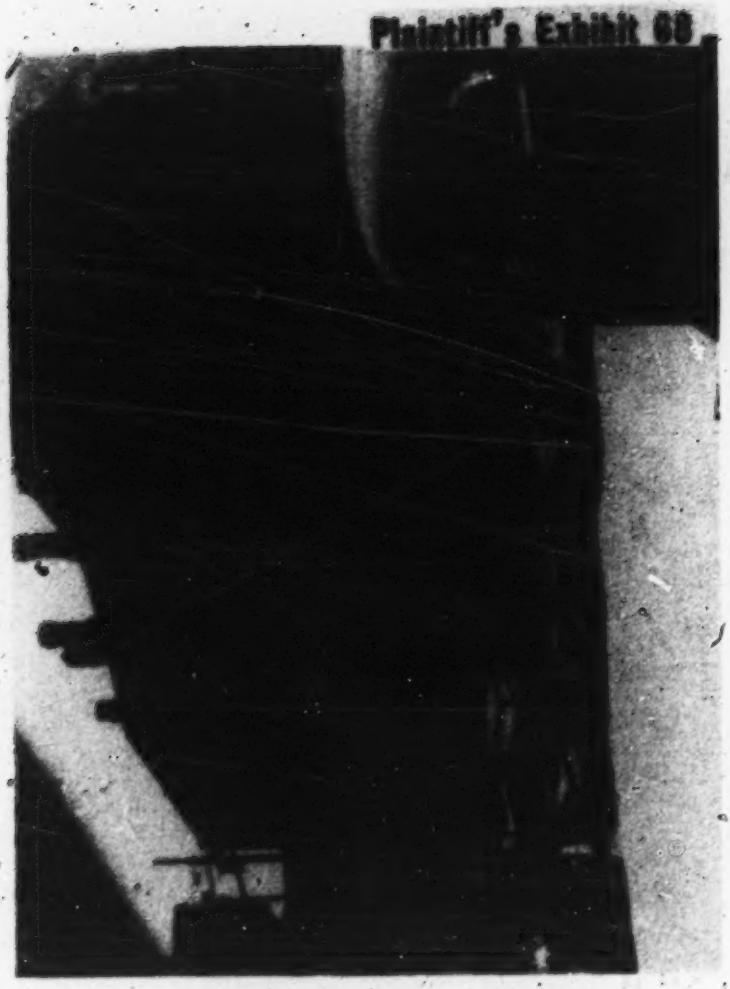
Corporations are also required to file all amendments to their articles of incorporation.

The certificate of incorporation and all amendments thereto must be recorded in the office of the County Recorder of the County in which the business office of the corporation is located within fifteen days from the issuance thereof.

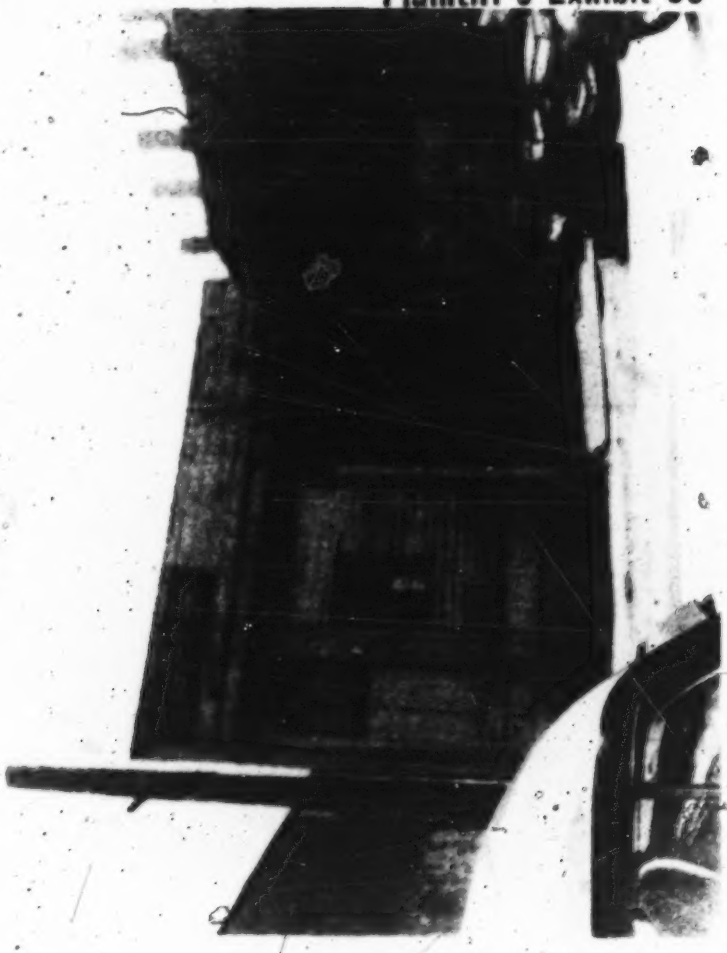
2672 Certificate of Authority of Fieldcrest Dairies Inc Mail to: F. A. Gariepy 1 N. LaSalle Chicago State of Illinois, Office of the Secretary of State 12122922 State of Illinois Cook County ss. No. ..... Filed for Record 1938 Feb 23 PM 2 02 1145 and recorded in Book ..... Page 113 Recorder Edward J. Kaindl Book 1145 Page 117

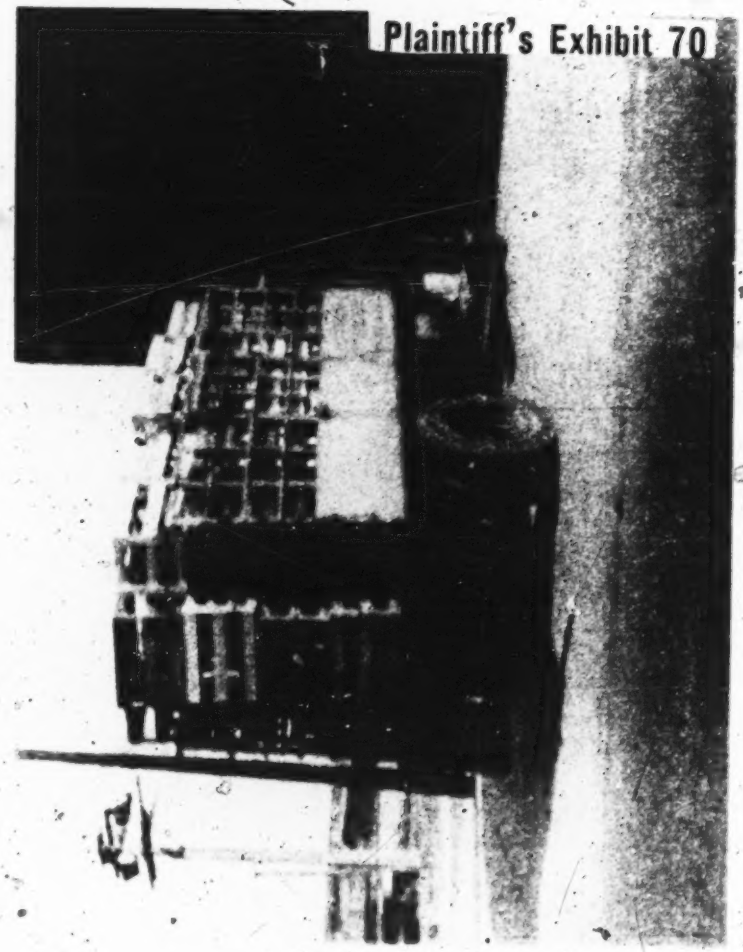
Plaintiff's Exhibit 66

Plaintiff's Exhibit 67

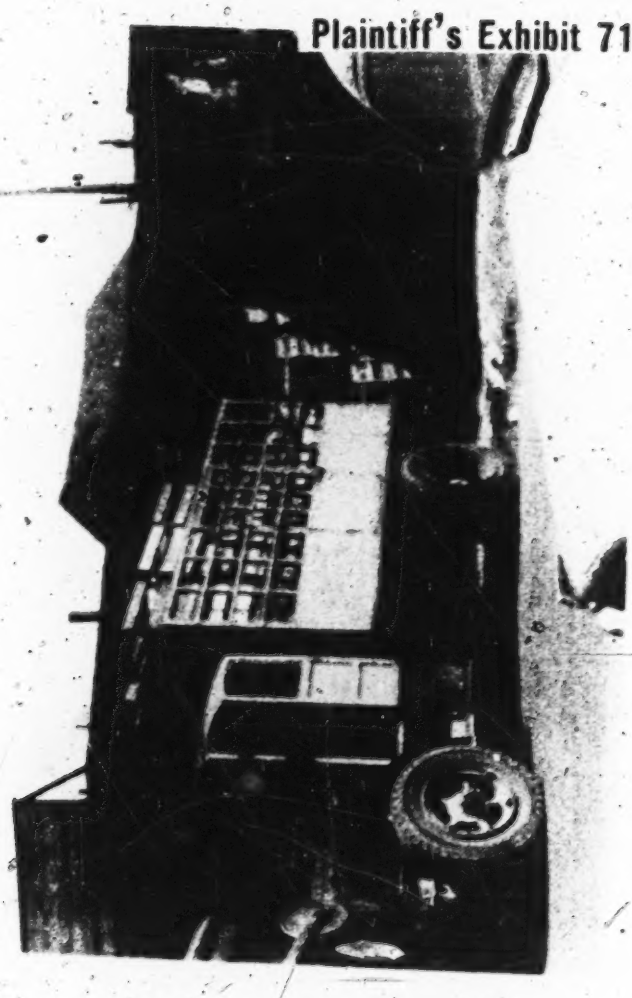

Plaintiff's Exhibit 68

Plaintiff's Exhibit 69



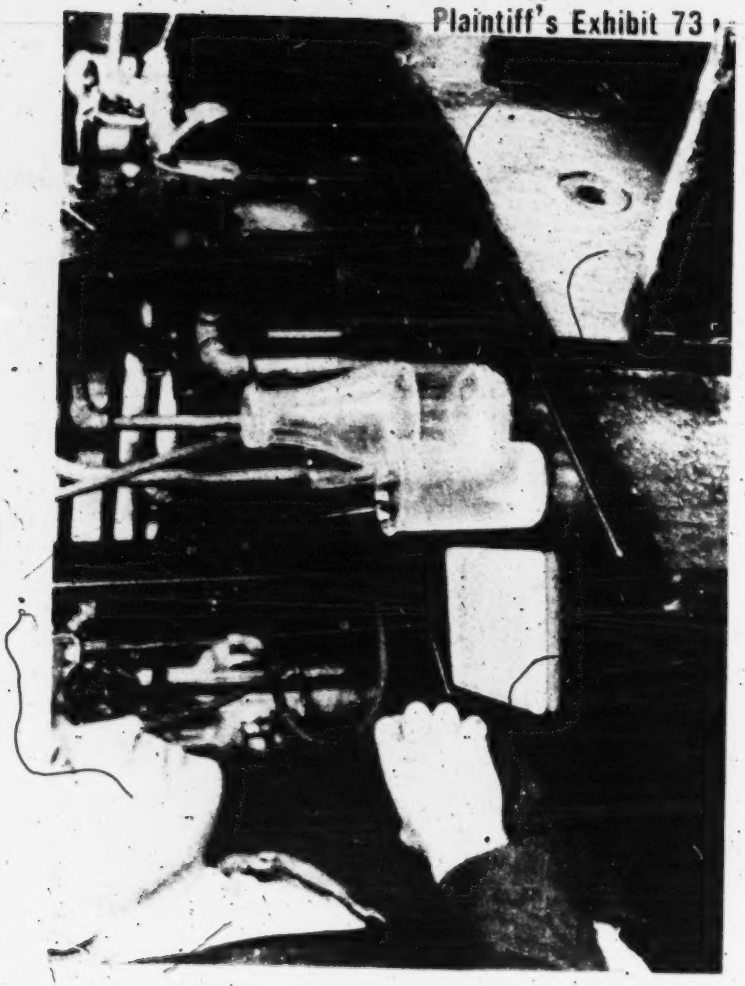

Plaintiff's Exhibit 70

Plaintiff's Exhibit 71

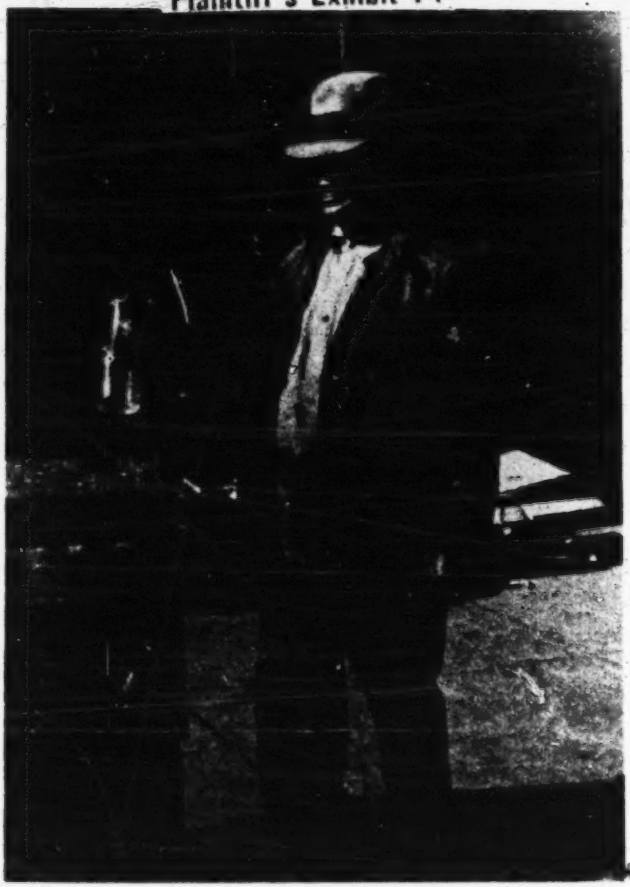


Plaintiff's Exhibit 72

Plaintiff's Exhibit 73



Plaintiff's Exhibit 74

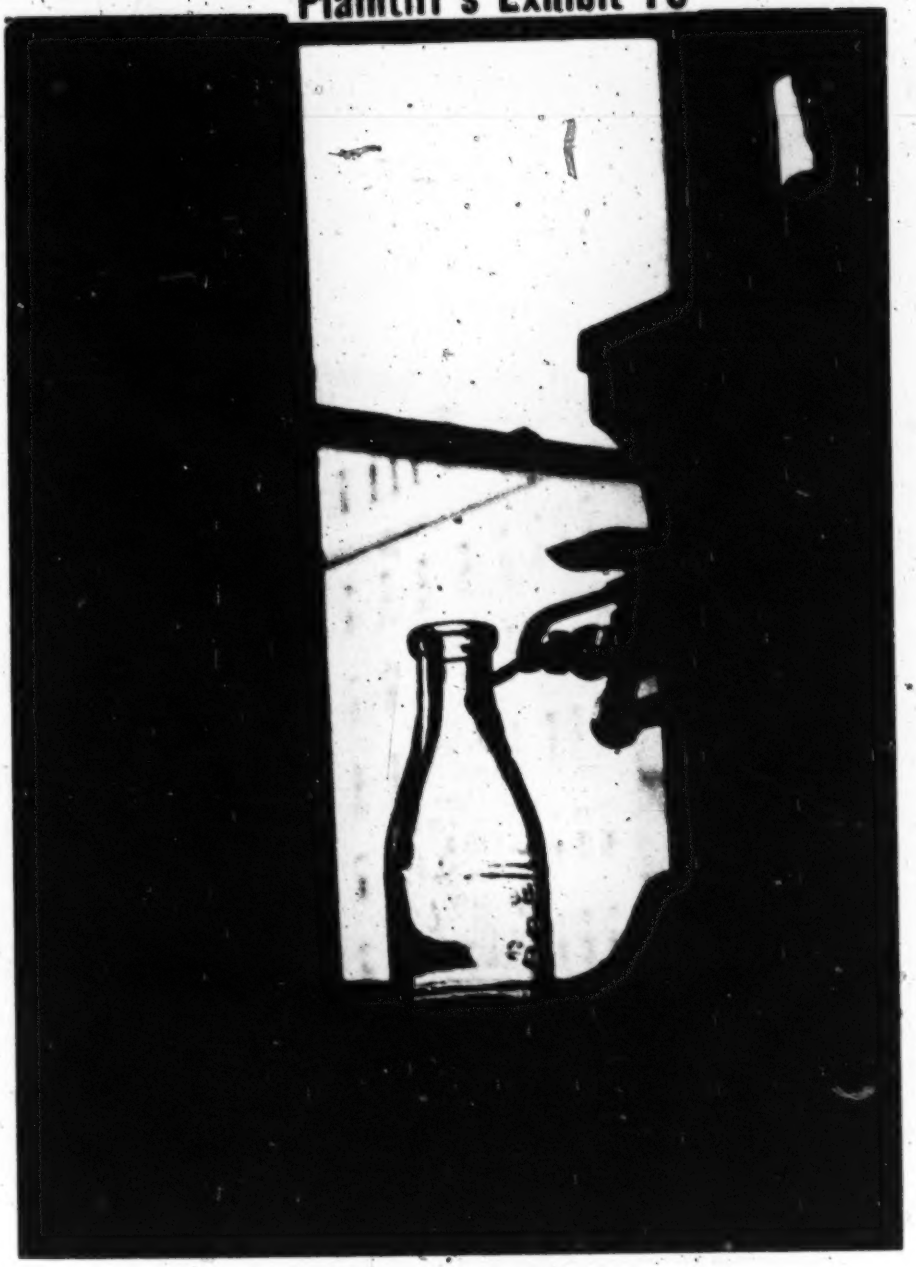


Plaintiff's Exhibit 75

Plaintiff's Exhibit 76

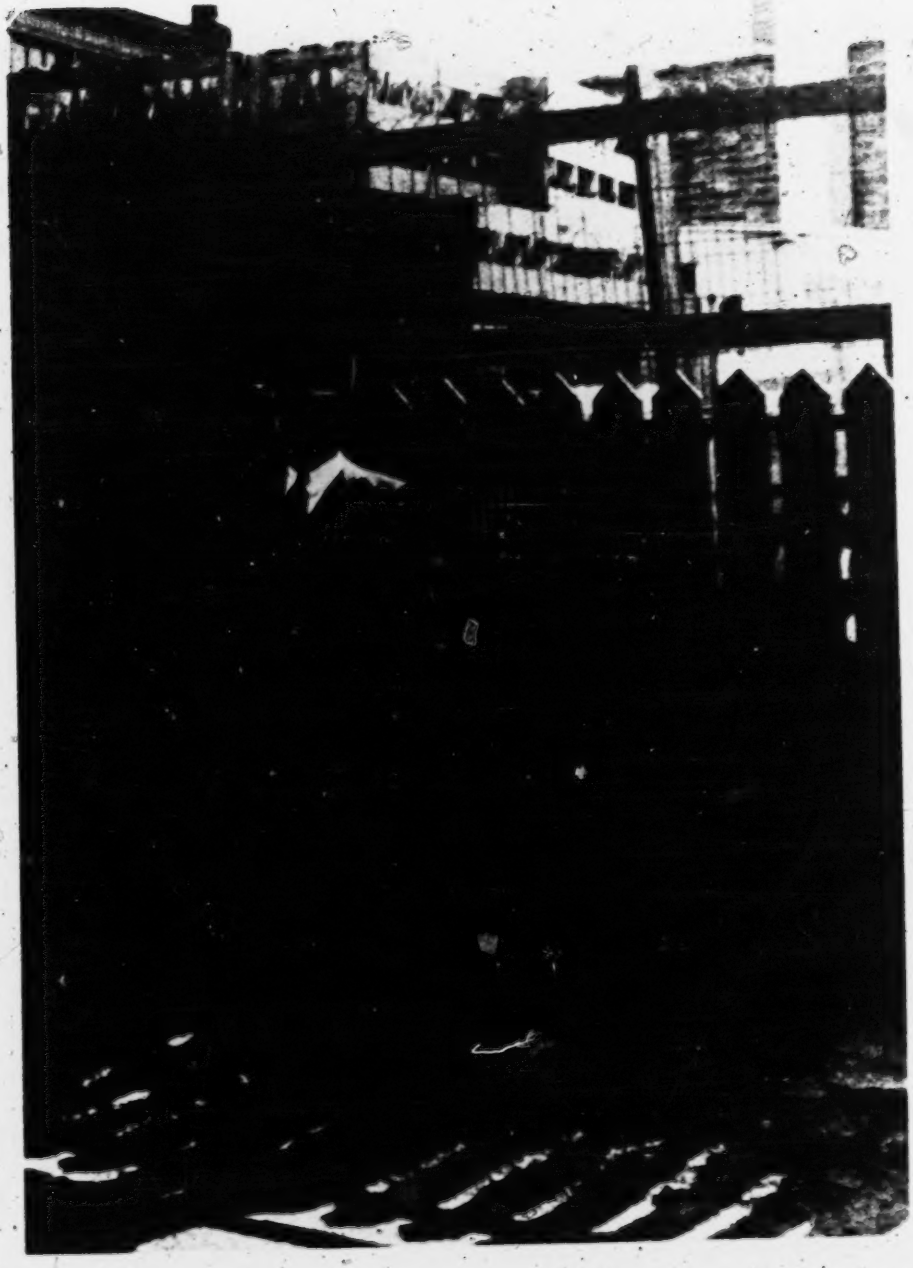
Plaintiff's Exhibit 77

Plaintiff's Exhibit 78



Plaintiff's Exhibit 79

Plaintiff's Exhibit 80



Plaintiff's Exhibit 81

2689 (Letterhead of University of Illinois College of Medicine Department of Pathology and Bacteriology
1853 West Polk Street Chicago, Illinois)

December 17, 1937

Mr. George D. Scott
Ex-Cell-O Corporation
1200 Oakman Boulevard
Detroit, Michigan

Dear Mr. Scott:

I am enclosing a copy of a letter received to-day from Dr. Parran. I presume you have had your conference as indicated in this letter with both Dr. Parran and Mr. Frank. I shall be glad to hear from you if I can be of further service to you.

If, in your opinion, you have no further need for my services after the present time, it will be perfectly agreeable for me to discontinue my work January 1st, or at any time you might think it desirable. Mr. Dean called me and I have postponed a meeting with him pending the outcome of your Washington conference. As I told Mr. Dean on the telephone, I was not at all sure that he needed my services. When the proper time comes, I will discuss this with Mr. Dean, but I am not at all convinced that I can render him any worth while service after he installs a Pure-Pak machine in his plant. The Chicago Health Department will supervise this and I do not see the need of a duplicate supervising service. However, this matter can be settled at a later date.

Yours truly,
Lloyd Arnold
Lloyd Arnold, M. D.

Enc.
LA:MD

Pl Exhibit 83 Jacob I. Grossman Master in Chancery

(Letterhead of Lloyd Arnold M.D. 5844 Stony Island Avenue Chicago)

Mr. George Scott
Ex-Cell-O Corporation
1200 Oakman Boulevard
Detroit, Michigan

Confidential

Dear Mr. Scott:

I spent three hours, the whole of yesterday afternoon (Wednesday) at the Chicago Board of Health. I have never been concerned with a situation so hopelessly involved as yours.

First: Paper containers for milk are not included as a part nor are they recognized by the United States Public Health Service Standard Code. This is a great disadvantage. There is therefore a legal justification for the exclusion of this type of package if the local health authorities wish to do so.

Second: Dr. Bundesen does not trust paper containers for fresh-fluid pasteurized milk. He feels that the use of such containers will lower the present milk sanitary standards and quality. He is honest and considers this procedure a health safeguard.

Third: I saw all correspondence relative to Frank—Dean correspondence. Surgeon General, Dr. Thomas Parran is intimately involved in this matter. Dr. Bundesen wrote him personally protesting the first letter from a junior man. Dr. Parran answered this and apparently dictated the letter signed by Frank to Dean after the first letter referred to. In the correspondence Dr. Parran thought paper milk containers had proved satisfactory and were being used to an extent that warranted favorable consideration. He admitted they were not approved in the Standard Ordinance, but he wants the Advisory Committee of Frank's to put these containers in the Code. Dr. Parran's letter was very friendly toward paper containers.

Fourth: I am being placed in an embarrassing position. I know Doctors Bundesen, Parran, etc. as a research man in Public Health and Bacteriology. The report I made to Bundesen was read by him with interest. I am to get it back today. I will forward it to you. I think you
2691 could get farther by seeing Dr. Parran with this report than for me to see them. They would not under-

stand my presence. They have seen reports from me many times. We usually draw a clear line of demarkation between consulting scientific service and "influence" due to personal or professional connections or friendship.

Fifth: Dr. Bundesen wants me to keep the paper container problem in hand. He asked me to draft standards to be submitted to the United States Public Health Service. This is a future proposition and will require several weeks, then further delay in getting these standards adapted. Bundesen is satisfied with his present milk situation and sees no need to hurry. He will not write the United States Public Health Service at this time to formulate standards. He wants me to submit more data on this subject. This is crossing over into the Breed-Sanborn field.

I think you should see Tom Parran. Your viewpoint has never occurred to him and you will find him reasonable and fair. I am writing him on University letterhead and am enclosing a copy.

Yours truly,
Lloyd Arnold
Lloyd Arnold, M. D.

Enc.
LA:MD

2692

(Chicago, Ill.)
(Dec 9)
(4 30 PM)
(1937)
(Mid-West Sta.)

Cancelled 16 cents United States Postage Stamps.

Special Delivery Special Delivery
Air Mail Air Mail

Mr. George Scott
Ex-Cell-O Corporation
1200 Oakman Boulevard
Detroit, Michigan

Confidential

(Stamp) Received Dec 10 1937 Ex-Cell-O Aircraft & Tool Corporation.

(On Reverse Side)

Lloyd Arnold M.D.
5844 Stony Island Avenue
Chicago

(Chicago, Ill.)
(Dec 9)
(5 30 PM)
(1937)
(Air Mail)

2693 For Information of Mr. George Scott

December 9, 1937.

Dr. Thomas Parran, Surgeon General,
United States Public Health Service,
Washington, D. C.

Dear Doctor Parran:

The single service paper milk container has been handled badly in the Chicago area. Conflicting viewpoints and misunderstandings have developed. I became interested in this situation a month or so ago.

Mr. George Scott of the Pure-Pak group of Detroit has seen me several times about his product. I have been to Geneva for a conference with Doctors Breed and Sanborn about the paper board stock used in his product. I am convinced of the sincerity and the desire to co-operate in every way on the part of Mr. Scott and his associates. I feel that I have rendered all the advice I can in this situation. Some misunderstandings have developed and I wish you would see Mr. Scott and straighten out several points. I know of no one who could advise Mr. Scott as to the proper course and procedure he should follow as well as you.

I shall be glad to render what service I can and will gladly come to Washington at any time to confer with anyone you might suggest.

Yours truly,
Lloyd Arnold, M.D.

LA:MD

(Stamp) Received Dec 10 1937 Ex-Cell-O Aircraft & Tool Corporation.

2694 PLAINTIFF'S EXHIBIT NO. 85:

TREASURY DEPARTMENT
United States Public Health Service
National Institute of Health
(Cut) Washington, D. C.

Division of Public Health Methods
Sanitation Section

November 12, 1937.

Mr. S. E. Dean, Jr.
Dean Milk Company
20 North Wacker Drive
Chicago, Illinois

Dear Mr. Dean:

In Mr. Frank's absence I have your request of November 9 for our opinion on single service containers in the distribution of milk and milk products.

Studies are being made by various agencies with the view of formulating suitable specifications for the manufacture of paper for bottles, also for the manufacture, shipment, and use of the bottles themselves. There is as yet, however, no general agreement on satisfactory specifications. For this reason we have suggested that health officers grant provisional permits for the use of paper bottles if such bottles are properly protected against contamination during shipment, storage, and handling at the milk plant; but all prospective users should be warned that much more stringent regulations may later be made.

Yours very truly,
A. W. Fuchs,
A. W. Fuchs,
Senior Sanitary Engineer,
Sanitation Section.

AWF:IC
cc Dr. Bundesen

2695 PLAINTIFF'S EXHIBIT NO. 86.

TREASURY DEPARTMENT
United States Public Health Service
National Institute of Health
(Cut) Washington, D. C.

Division of Public Health Methods
Sanitation Section

November 26, 1937.

Mr. S. E. Dean, Jr.
Dean Milk Company
20 North Wacker Drive
Chicago, Illinois

Dear Mr. Dean:

Upon my return to Washington my attention has been directed to your letter of November 19 and Mr. Fuchs' reply of November 12.

It has recently developed that there is a wide difference of opinion among health authorities as to whether paper milk bottles should be approved and if so under what safeguards. For this reason we have now concluded that this entire problem should be brought before the Milk Sanitation Advisory Board at its next meeting, and that pending its decision local health authorities will be justified in maintaining the status quo. This means that in such cities as Chicago, where the use of paper milk bottles has not been permitted, the Board of Health will be justified in continuing to withhold permission at least until the Advisory Board reaches a conclusion.

Very truly yours,
Leslie C. Frank,
Leslie C. Frank,
Senior Sanitary Engineer,
Sanitation Section.

LCF:IC
cc Dr. Bundesen
Date Rec'v'd Dec. 3, 1937.

2696 PLAINTIFF'S EXHIBIT NO. 87.

University of Illinois
College of Medicine
Department of Pathology
and Bacteriology
1853 West Polk Street
Chicago, Illinois

February 7, 1938.

Mr. George D. Scott
Ex-Cell-O Corporation
1200 Oakman Boulevard
Detroit, Michigan

Dear Mr. Scott:

Please return to me as soon as you can the report I prepared for Dr. Bundesen, President of the Chicago Board of Health.

Yours truly,
Lloyd Arnold,
Llyod Arnold, M. D.

LA:MD

2697 PLAINTIFF'S EXHIBIT NO. 88.

Copy of last pages of Defendants' Exhibit No. 31.
Proposed Standards to be Met by Paper Milk Containers.

1. The surfaces of paper milk containers coming in contact with milk shall be impermeable and non-porous, and shall be smooth and unbroken. Paraffin-immersion treatment, as employed at present, is not considered as meeting this definition.

2. The surface of the container in contact with milk shall be sterile or constructed of such materials that it can be disinfected in the dairy before use.

3. The material forming the surface shall be inert and of such composition that it will not react with milk, or "flake-off" into the milk. No toxic material which may be deleterious to health shall be present in paper, moisture-proofing materials, adhesives or other materials used in

the manufacture or subsequent treatment of paper milk containers.

4. Containers shall be made from virgin pulp or other suitable material and such board or material, prior to moisture-proofing, shall not have a bacterial count exceeding 500 colonies per gram.

Paper and similar materials to be used in the fabrication of milk containers shall be manufactured under the supervision and inspection of an official agency such as the United States Public Health Service. Such materials shall be manufactured under sanitary conditions and the plant, surroundings, equipment and method in
2698 paper mills and conversion plants shall meet the requirements of the United States Public Health Service for grade A milk plants.

Paper rolls, packages or boxes in which milk containers or materials for fabricating milk containers are shipped shall bear an approval stamp of the official inspection agency and such stamp shall identify, by number or other approved method, the source of the product.

Only water meeting the Federal standard for safe drinking water shall be used in the treatment of pulp or other materials and in any subsequent treatment of containers.

Unless used immediately after manufacture, container blanks shall be wrapped, sealed and protected from contamination until used. When used the outside sheet on rolls or the top and bottom sheets of sheeted stock shall be discarded in all cases.

5. All stock and containers shall be handled mechanically in the conversion plant as far as possible. Following fabrication, until final filling and sealing in the milk plant, container surfaces with which milk or milk products come in contact shall be protected from contamination.

6. Throughout the processes of printing, folding, sealing, adhesive application, or packing prior to shipment to milk plant, all stock and containers shall, as far as
2699 feasible, be handled mechanically and be suitably wrapped or packaged before shipping.

Packaged container stock at milk plants shall be kept in a clean, dry place and opened only for immediate use. Where it is necessary to form or manipulate containers, all surfaces with which milk or milk products may come in contact, shall be protected from human handling.

7. The glueing or sealing of container board shall be accomplished by means of non-fermentable adhesives. Ad-

hesives must not contaminate containers in any manner, nor contain any substance in amounts detrimental to health.

8. Cases for shipping empty containers shall be constructed of board or wrapping designed adequately to protect containers from injury or abuse due to tearing or breaking. Containers shall be stored in sealed, dry, unbroken cases, in a dry, vermin-proof location. Partly empty shipping cases of prefabricated containers shall be resealed, rewrapped, or otherwise protected from contamination during storage. Empty containers shall not be exposed to contamination at any time.

The opening of shipping cases and the storing of containers shall be done in a room separate from other milk handling equipment.

9. Equipment used for moisture-proofing, bactericidal treatment, filling or otherwise handling paper or similar materials to be used for milk containers shall conform to the requirements of the United States Public Health Service for milk handling equipment used in grade A milk plants.

2700 10. In the filling and handling of the container, milk shall be so handled to prevent adulteration, and the contents of the container shall not be contaminated by micro-organisms, chemicals or other substances contained in the material forming the wall.

May 11, 1939.

2701 PLAINTIFF'S EXHIBIT 89.

Federal Security Agency.

U. S. PUBLIC HEALTH SERVICE,

Washington.

In Replying
Address the Surgeon General,
U. S. Public Health Service
D. Q. Division,
Sanitation Section.

October 6, 1939.

Dr. Herman N. Bundesen,
President, Board of Health,
54 W. Hubbard Street,
Chicago, Illinois.

Dear Dr. Bundesen:

Your request of September 28, addressed to the Surgeon General, for a copy of Section 10 of the Public Health Service Milk Ordinance and Code as it will appear in the forthcoming printed edition of that publication, has been referred to this office for reply.

There is attached a copy of Section 10 as it will appear in the forthcoming printed 1939 Milk Code.

Very truly yours,
(Signed) Walter N. Dashiell,
Walter N. Dashiell,
Asso. Public Health Engineer for Chief,
Sanitation Section.

ENC.
WND:IC
cc State Health Officer.
cc Dr. W. H. Haskell.

(Typewritten sheets attached entitled "Section 10 as it will appear in the 1939 printed Public Health Service Milk Code" are identical with pages 2, 3, 4, 5 and 6 of Defendants' Exhibit 29 and by agreement of the parties are here omitted in order to avoid duplication.)

2702 PLAINTIFF'S EXHIBIT 92.

Federal Security Agency.
U. S. Public Health Service,
(Cut) Washington.

In Replying
Address the Surgeon General,
U. S. Public Health Service.
Sanitation Section,
D. Q. Division.

September 16, 1939.

Mr. George D. Scott,
Sales Manager,
Pur-Pak Division, Ex-Cell-O Corp.,
1200 Oakman Boulevard,
Detroit, Michigan.

Dear Mr. Scott:

Your Washington attorney, Mr. Sumner S. Kittelle, requested us, under date of September 15, to send you certain information relative to the requirements for paper milk bottles in the Milk Ordinance and Code recommended by the Public Health Service.

Section 10 now provides that milk and milk products sold in distributors' containers in quantities of less than one gallon shall be delivered in standard milk bottles. This has been amended so as to add "or in single-service containers," and will so appear in the forthcoming printed 1939 edition, which is to be issued in about two months.

The specifications for single-service containers, etc., which will appear in the new edition will require bactericidal treatment equivalent to contact with paraffin for at least 25 seconds at at least 180° F. or for at least 35 seconds at at least 175° F. in approved equipment operated in an approved manner. (These time-temperature combinations are, however, subject to change as a result of further tests now being conducted.) Contact with paraffin at the required temperature for part of the required time combined with contact with hot air at the required temperature for the remainder of the required time will be

interpreted as complying with this requirement unless and until such combination is demonstrated to be inadequate for proper bactericidal treatment.

Very truly yours,
A. W. Fuchs,
A. W. Fuchs,
Senior Sanitary Engineer, for Chief,
Sanitation Section.

AWF:hb
CC: Dr. Bundesen.
CC: Dr. Haskell.

2709 DEFENDANT'S EXHIBIT 1.

From Owen Rall, c/o Joseph S. Clark, Jr.,
1320 Packard Bldg.

April 27, 1939.

Sylvan Seal Milk, Inc.,
612 South 24th Street,
Philadelphia, Pa.

Name .....
Business address .....
Age .....
Position with company.....
How long with company.....
Nature of business of Company.....
Where are its plants.....
How long been using Pur-Pak (In Baltimore.....
and in Philadelphia) .....
Sold how many quarts of milk in Pur-Pak (hundreds of thousands of quarts).....
State briefly the process by which milk is put in Pur-Pak:
.....
.....

(Paper blank similar to Dean-Fieldcrest blank, plaintiff's exhibit 3, which I shall show you, is placed on tray of machine, which automatically forms it into a paper bottle by sealing the bottom, then immerses it in paraffin heated to 177 degrees F. and drains in heated chamber at same temperature. Bottle is in paraffin and draining chamber for 23 seconds. Machine then cools the paraffined bottle for 23 seconds in cooling unit at 40 degrees F., then fills with milk or cream automatically, and the top is automatically heated and closed and stapled with a pre-

heated wire staple. When operation is completed, result is substantially the same as plaintiff's exhibit 2 (a dummy paraffined carton of Fieldcrest Dairies, Inc., which I shall show you.) Full packages then placed in cartons and delivered to stores.

Do municipalities in which you sell milk and cream have ordinances regulating the inspection, sanitation, and handling of liquid milk and cream?.....

2711 DEFENDANT'S EXHIBIT 1A.

Total time in chamber ..... 23 seconds

7 Bottles draining $\frac{7 \times 60}{38}$ = ... 11 seconds

Actually in paraffine..... 12 seconds

2710 DEFENDANT'S EXHIBIT 1B.

Are the sales which you have described in these various municipalities made in Pur-Pak with the approval and consent of the health authorities there?.....

I will show you planograph copies of the following letters to Silver Seal Dairy Products Co. or to Edward R. Fuller, president, and ask you to state whether the originals of these letters were received by your company or its predecessor at or about the dates they bear: Nov. 27, 1936, H. M. Packer to Silver Seal; Nov. 28, 1936, Dennis J. Sullivan, deputy health commissioner, Jersey City, N. J., to Edward R. Fuller; Nov. 30, 1936, John C. Foote, Wilmington, Dela., to Edward R. Fuller; Dec. 1, 1936, W. K. Moffett to Silver Seal; Dec. 1, 1936, J. Lynn Mahaffey to Silver Seal; Dec. 2, 1936, Geo. W. Grim to Silver Seal Dairy; Jan. 5, 1937, Huntington Williams to Mr. Fuller.

(If Mr. Fuller is the only one who can identify this correspondence, I trust that he will be available to testify.)

Any complaints about absorption by the container of milk or cream?.....

Any experience that Pur-Pak paper bottles, formed, paraffined and filled in accordance with above procedure does absorb milk or cream in the time within which such milk or cream remains in the paper bottle?.....

Bacteria counts (identify Wilmington report, etc.)

2712 **DEFENDANT'S EXHIBIT NO. 2.**

Microbiology in Pulp and Paper Manufacture.

J. R. Sanborn
New York Agricultural Experiment Station,
Geneva, New York.

Scope of Pulp and Paper Mill Microbiology.

Many pulp and paper mills are slow to correlate mill problems in biology and sanitation with the requirements of sanitarians in their applications of paper products to new uses. The perennial biological problem of pulp and paper mills is slime which has been shown to affect paper quality.(1) What the average paper maker calls slime, however, is only a small part of pulp and paper mill microbiology. The growths which may be produced in mill systems are as varied as the diversified predominating types of organisms, including species responsible for decomposition, discoloration and spotting of pulp and paper. It is obvious that slime problems should not be looked upon as restricted or transient conditions. They represent general microbiological hazards requiring the application of consistent programs of prevention.

Several years ago this situation was seriously considered by certain mills in the light of possible effects upon the sanitary condition of paper products. It was found, for example, that container board for food packaging may harbor thousands of mico-organisms per gram of paper, including coliform organisms and filamentous fungi. Problems of sanitation and food spoilage from the use of highly contaminated container board were immediately investigated. Studies such as these have brought to the attention of the industry the fundamental importance of microbiology and practical mill sanitation.

2713 Mills are now viewing critically their water supplies and the condition of raw materials. They are studying the problem of white water utilization from the standpoint of recontamination of the system by undesirable bacteria, as well as from economic and operative aspects.

Presented before the Empire State Section of the Technical Association of the Pulp and Paper Industry, Syracuse, New York, November 13, 1937.

Plants so fortunately situated as to have naturally pure process water do not ordinarily find it difficult to control the development of micro-organisms. Polluted supplies present at the outset a serious obstacle to mill sanitation, requiring careful attention to purification problems which may be aggravated by wide fluctuations in degrees of pollution. Nearly all of the undesirable mill contamination comes from water, though occasionally evidence points to organisms from pulp wood, lap stock, and various raw materials. Conditions in piles of pulp wood sometimes favor the development of fungi. Spores and growth fragments may be carried to the mill by air dissemination or on the boots and clothing of workers.

Besides wood rotting fungi which may be isolated, such as members of the genera Fomes, Polyporus, and Stereum, other fungi, more or less troublesome in pulp and paper manufacture, are sometimes present, including Trichoderma, Botrytis, Penicillium, Aspergillus, Alternaria, and Stemphilium.

Lap stock of virgin pulp, improperly stored, frequently shows marked evidence of fungus growth, discoloration and decomposition. A few types exert a bleaching action on pulp. The fungi causing numerous discoloration difficulties consist of a number of well-known species and various slime-formers, such as

Trichoderma sp.	Chaetomium sp.
Cladosporium sp.	Trichothecum roseum
Verticillium sp.	Aspergillus oryzae
Sporotrichum sp.	Aspergillus niger
Alternaria sp.	Acrostalagmus sp.
Penicillium sp.	

In addition to effective water purification, therefore, methods of practical mill sanitation must be followed to prevent colonization and spread of undesirable bacteria and fungi. Table 1 presents a brief comparison of six mills manufacturing miscellaneous grades of paper, illus-
2714 trating concisely, though incompletely, the complex microbiological conditions existing at some of these plants. The counts were obtained by the plating method using standard agar.

This table shows the variations in raw water counts among the rivers of these regions but gives no indication

of the fluctuations which some of them exhibit. In the mills of the Northeast, slimes caused by typical river water bacteria increase during summer months. Fungus growths may cause greatest difficulty in the fall and late winter. Periodic discoloration troubles also occur due to growth of algae in raw water and development of iron bacteria in pipe lines. Reference has previously been made to these various groups of organisms found in pulp and paper mills.(1) (2)

Table 1. Approximate Microbiological Conditions at Representative Pulp and Paper Mills of the Northeast

Mill	Raw Water Colonies per cc. 32°C.-48 Hrs.	Chlorinated Fresh Water 32°C.-48 Hrs.	Heaviest Contamination	Average Count in System	Count During Periods of Best Control	Season of Greatest Slime Difficulty	Troublesome Types of Organisms
1	500	10	3,435,000 (Ground Wood Mill)	424,000	Less than 100 (Sulfite Mill)	October, July and August	Non-Spore-bearing Bacteria. Spore-bearing Bacteria. Filamentous and Yeast-like Fungi.
2	13,600	5	4,820,000 (Secondary Stock)	92,260	Less than 100 (Bleached Sulfite Stock)	May to August	Non-Spore-bearing Bacteria. Spore-bearing Bacteria. Micrococci.
3	290	8	5,760,000 (Paper Mill White Water)	603,225	6,000 (Sulfite Mill)	February and March, June to August	Yeast-like and Filamentous Fungi. Non-spore-forming Bacteria.
4	22,700	10	5,000,000 (Paper Mill White Water)	990,850	122,500 (Sulfite Mill)	April to August	Non-spore-bearing Bacteria. Spore-forming Bacteria. Filamentous and Yeast-like Fungi.
5	2,150	0	2,250,000 (Paper Mill White Water)	158,570	Practically Free of Micro-organisms (Ground Wood White Water)	October	Filamentous Fungi.
6	2,000	17	280,000 (Ground Wood Mill)	7,450	Less than 100 (Bleached Sulfite Stock)	June to August	Non-spore-forming Bacteria. Spore-forming Bacteria. Filamentous Fungi.

2716 Development of Micro-organisms in Mill Systems.

Examinations of blow pit stock before introduction of white water, show that the pulp produced by sulfite mills is sterile. In the case of ground wood, it has been found that, while stock taken directly from grinders is frequently practically sterile, heat-resistant organisms may persist. Unless steps are taken to reduce contamination from recirculating white water, large numbers of bacteria may be introduced into pulp from this source. The situations at various mills are indicated by the following figures:

Table 2.

Contamination of Pulp by Organisms from White Water.

	Mill A	Mill B	Mill C		Mill D
	Grinder Stock	Blow Pit	Grinder	Blow Pit	Blow Pit
Fresh Pulp..... (Colonies developing per cc. in 48 hrs. at 32°C. on standard agar).	0	0	0	0	0
Bacterial Count per cc. in Reused White Water	600	155,000	1,000,000	2,104,000	415,000

Starting with this original contamination, further increases during subsequent operations or decreases in bacterial numbers due to germicidal treatments have been described elsewhere.(1) Effective control of white water contamination is being maintained at a number of mills. This is done through the use of fresh water make-up and direct application of bactericidal agents. The effective use of bactericidal treatments is essential not only to efficient mill operation and paper quality but also to the production of paper which meets the sanitary requirements of public health authorities.

2717 Microbial Content of Finished Paper.

For the purposes of the present discussion, pulp and paper mill micro-organisms may be divided into two classes, the heat-resistant and non-heat-resistant species. The former group includes various slime-producing organisms, spore-bearing bacteria, and micrococci. Many non-spore-

bearing bacteria from water supplies and a number of filamentous fungi occur in the non-heat-resistant class. Abundant contamination with miscellaneous types of organisms takes place at deckers, screens, head boxes and in paper machine white water.

As the sheet goes over the driers, the surface of the paper reaches temperatures of 80° to 100°C., or over. It is difficult to determine the actual temperature of the interior of the sheet and experimental results vary. While there are considerable reductions in bacterial numbers during this process, drier temperatures cannot be relied upon to eliminate all of the non-spore-forming bacteria in pulp, nor spore-producing species usually present in appreciable numbers. Container board made from virgin pulp produces on standard agar less than 500 colonies per gram of disintegrated stock. In types of container board where less attention is paid to sanitation in manufacturing operations or quality of pulps employed, counts may be much higher than 500.

It would be decidedly advantageous to the pulp and paper industry to produce consistently sterile paper for the packaging of perishable foods and sanitary protection of other easily contaminated products. Definite progress toward this goal is being made by the majority of mills producing milk container board. The beneficial results achieved by plants which persistently practive cleanliness and microbiological control are reflected in the improved sanitary condition of food paper containers used for perishable food products such as milk.

The entire industry should be cognizant of and prepared to apply this sanitary technique, which is based upon intimate knowledge of mill microbiology and specific preventive measures. Public Health authorities are watching with interest the hygienic developments in the making and handling of bacteria-free paper.

2718 (1) Sanborn, J. R., End. Eng. Chem. (1937) 29;949.
(2) Sanborn, J. R., J. Bact. (1933) 26;373.

2719 **DEFENDANT'S EXHIBIT NO. 7.**

Table 1.—Number of Bacteria Enmeshed in the Body of the Paper

Bacteria per Gram of Paper

Sample No.	Sample No.	Sample No.
1. 7493	25. 440	49. 63
2. 2570	26. 320	50. 60
3. 2550	27. 253	51. 57
4. 2400	28. 253	52. 33
5. 2350	29. 240	53. 33
6. 2173	30. 203	54. 20
7. 2160	31. 193	55. 20
8. 2070	32. 190	56. 13
9. 2000	33. 183	57. 13
10. 1880	34. 183	58. 10
11. 1833	35. 153	59. 10
12. 1733	36. 137	60. 7
13. 1560	37. 133	61. 7
14. 1490	38. 133	62. 3
15. 1437	39. 123	63. 3
16. 1120	40. 120	64. 3
17. 1000	41. 120	65. 3
18. 720	42. 117	66. 3
19. 680	43. 100	67. 0
20. 560	44. 93	68. 0
21. 560	45. 91	69. 0
22. 560	46. 73	70. 0
23. 560	47. 70	
24. 440	48. 67	

2720 **DEFENDANT'S EXHIBIT NO. 8.**

Board of Health—City of Chicago, Bureau of Dairy Products

(Distributor) Ogden Dairy Co., (Address) 4333 Ogden Ave.

Name of Owner Frank Kubat Dist No. 4.

(Past. Plant Platform Store Wagon Office) Collected at _____ Location 4333 Ogden Ave.

(Milk from) _____ (Address)

Inspector Larsen Day Tues. Date 1/19/37 Hour 2 P. M. Attendant C. Kubat.

Sample Numbers	Sample of	Past. or Raw	Container	Approximate Amount in Container	Serial No. Day Marks	Temp.	Result of Analysis: Bacteria per c. c.	Butter Fat %	Sediment	Solids Not
3713	Empty qt bottle						Less Than 50 Bacteria Per Bottle			

President of Board

2721 **DEFENDANT'S EXHIBIT NO. 9.**

Bureau Serial No. D-45713 **Laboratory Serial No. 790.**
Sample of Empty qt bottle Amount.....
Source Past Plant.
Inspector Larsen.
Tests Required Bact.

Official Plate Count Est. per Bottle.
Dilution 1.50 Colony Count.....

B
Bacteriologist.

	1st Test	2nd Test		
Specific Gravity	.....	.....	Acidity	%
Total Fat	..... %	..... %	Added Water	%
Solids Not Fat	..... %	..... %	Sediment	
			Total Solids (Grav.)	%

Special Tests .....

4

.....
Chemist

Bacteriological and Chemical Examination of Milk
Board of Health—City of Chicago
Herman N. Budesen, M. D., President
Bureau of Laboratories

(Left-hand margin) Delivered 1937 Jan 20 PM 1 35
(Right-hand margin) Reported 1937 Jan 22 PM 4 36

2722 **DEFENDANT'S EXHIBIT NO. 10.**

Bacterial Content of Empty Milk Bottles Examined by the Board of Health of the City of Chicago during the years 1937, 1938, and the first nine months of 1939.

Totals of all Bottle Sizes.

	Year 1937		Year 1938		1st 9 months of 1939	
	Number	% of total	Number	% of total	Number	% of total
Total bottles examined, all sizes	1469	100.0%	1484	100.0%	1144	100.0%
Total bottles which showed no growth and were reported as containing less than 50 bacteria per bottle.	1138	78.2%	1357	91.4%	1057	92.4%
Total bottles which showed more than 50 bacteria but less than the maximum limit	247	16.8%	77	5.2%	58	5.1%
Total bottles which showed more bacteria than the maximum permitted	86	5.0%	50	3.4%	29	2.5%

2723 **DEFENDANT'S EXHIBIT NO. 11.**

Bacterial Content of Empty Milk Bottles Examined by the Board of Health of the City of Chicago during the years 1937, 1938, and the first nine months of 1939.

Size of Bottle—1 quart.

	Year 1937		Year 1938		1st 9 months of 1939	
	Number	% of total	Number	% of total	Number	% of total
Total quart bottles examined.	423	100.0	532	100.0	457	100.0
Total quart bottles which showed no growth and were reported as containing less than 50 bacteria per bottle.	315	74.5	481	90.4	417	91.4
Total quart bottles which were reported to contain between 50 and 1000 bacteria per bottle	84	19.8	32	6.0	34	7.4
Total quart bottles which were reported to contain more than 1000 bacteria per bottle	24	5.7	19	3.6	6	1.3

2724 **DEFENDANT'S EXHIBIT NO. 12.**

Bacterial Content of Empty Milk Bottles Examined by the Board of Health of the City of Chicago during the years 1937, 1938, and the first nine months of 1939.

Size of Bottle—1 Pint.

	Year 1937		Year 1938		1st 9 months of 1939	
	Number	% of total	Number	% of total	Number	% of total
Total Pint Bottles Examined	341	100.0%	325	100.0%	183	100.0%
Total Pint Bottles which showed no growth and were reported as containing less than 50 bacteria per bottle.	265	77.7%	296	91.0%	168	91.8%
Total Pint Bottles which were reported to contain between 50 and 500 bacteria per bottle.....	57	16.7%	20	6.2%	13	7.1%
Total Pint Bottles which were reported to contain more than 500 bacteria per bottle	19	5.6%	9	2.8%	2	1.1%

2725 **DEFENDANT'S EXHIBIT NO. 13.**

Bacterial Content of Empty Milk Bottles Examined by the Board of Health of the City of Chicago during the years 1937, 1938, and the first nine months of 1939.

Size of Bottle—One-Third Quart.

	Year 1937		Year 1938		1st 9 months of 1939	
	Number	% of total	Number	% of total	Number	% of total
Total one-third quart bottles examined	18	100 %	21	100 %	19	100 %
Total one-third quart bottles which showed no growth and were reported as containing less than 50 bacteria per bottle.....	16	88.9%	20	95.2%	18	94.7%
Total one-third quart bottles which were reported to contain between 50 and 350 bacteria per bottle.....	2	11.1%	1	4.8%	1	5.3%
Total one-third quart bottles which were reported to contain more than 350 bacteria per bottle.....	0	0	0	0	0	0

2726 **DEFENDANT'S EXHIBIT NO. 14.**

Bacterial Content of Empty Milk Bottles Examined by the Board of Health of the City of Chicago during the years 1937, 1938, and the first nine months of 1939.

Size of Bottle—One-half Pint.

	Year 1937		Year 1938		1st 9 months of 1939	
	Number	% of total	Number	% of total	Number	% of total
Total one-half pint bottles examined	522	100.0%	560	100.0%	467	100.0%
Total one-half pint bottles which showed no growth and were reported as containing less than 50 bacteria per bottle	413	79.1%	516	92.2%	440	94.2%
Total one-half pint bottles which were reported to contain between 50 and 250 bacteria per bottle	72	13.8%	22	3.9%	9	2.1%
Total one-half pint bottles which were reported to contain more than 250 bacteria per bottle	37	7.1%	22	3.9%	18	3.8%

2727 **DEFENDANT'S EXHIBIT NO. 15.**

Size of Bottle—Unclassified.

	Year 1937		Year 1938		1st 9 months of 1939	
	Number	% of total	Number	% of total	Number	% of total
Total bottles examined	165	100 %	46	100 %	18	100 %
Total bottles which showed no growth and were reported as containing less than 50 bacteria per bottle.	127	77.0%	44	95.6%	14	77.8%
Total bottles which showed more than 50 bacteria but less than the maximum limit	32	19.4%	2	4.4%	1	5.5%
Total bottles which showed more bacteria than the maximum limit	6	3.6%	0	0	3	16.7%

2728 DEFENDANT'S EXHIBIT NO. 16.

Sec. 10. Transferring or Dipping Milk; Delivery Containers; Handling of More Than One Grade; Delivery of Milk at Quarantined Residences.

Except as permitted in this section, no milk producer or distributor shall transfer milk or milk products from one container to another on the street, or in any vehicle or store, or in any place except a bottling or milk room especially used for that purpose. The sale of dip milk is hereby prohibited.

All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized, and all raw milk and milk products sold for consumption in the raw state shall be placed in their final delivery containers at the farm at which they are produced. Milk and milk products sold in the distributor's containers in quantities less than one gallon shall be delivered in standard milk bottles. It shall be unlawful for hotels, soda fountains, restaurants, groceries, and similar establishments to sell or serve any milk or milk product except in the original container in which it was received from the distributor or from a bulk container equipped with an approved dispensing device; provided that this requirement shall not apply to cream consumed on the premises, which may be served from the original bottle or from a dispenser approved for such service.

No milk or milk products shall be permitted to come in contact with equipment with which a lower grade of milk or milk product has been in contact unless such equipment has first been thoroughly cleaned and subjected to bactericidal treatment.

Bottled milk or milk products, if stored in water, shall be so stored that the tops of the bottles will not be submerged.

It shall be the duty of all persons to whom milk or milk products are delivered to clean thoroughly the containers in which such milk or milk products are delivered before returning such containers. Apparatus, containers, equipment, and utensils used in the handling, storage, processing, or transporting of milk or milk products shall not be used for any other purpose without the permission of the health officer.

The delivery of milk or milk products to and the collection of milk or milk-products containers from quarantined residences shall be subject to the special requirements of the health officer.

2729 DEFENDANT'S EXHIBIT NO. 17.

(Section 10 as it will appear in the 1939 printed Public Health Service Milk Code.)

"Sec. 10. Transferring or Dipping Milk; Delivery Containers: Handling of More Than One Grade; Delivery of Milk at Quarantined Residences.

"Except as permitted in this section, no milk producer or distributor shall transfer milk or milk products from one container to another on the street, or in any vehicle or store, or in any place except a bottling or milk room especially used for that purpose. The sale of dip milk is hereby prohibited.

"All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized, and all raw milk and milk products sold for consumption in the raw state shall be placed in their final delivery containers at the farm at which they are produced. Milk and milk products sold in the distributors' containers in quantities less than one gallon shall be delivered in standard milk bottles or in single-service containers. It shall be unlawful for hotels, soda fountains, restaurants, groceries, and similar establishments to sell or serve any milk or milk product except in the original container in which it was received from the distributor or from a bulk container equipped with an approved dispensing device: Provided, That this requirement shall not apply to cream consumed on the premises, which may be served from the original bottle or from a dispenser approved for such service. It shall be unlawful for any hotel, soda fountain, restaurant, grocery, or similar establishment to sell or serve any milk or milk products which have not been maintained, while in its possession, at a temperature of 50° F. or less.

"No milk or milk products shall be permitted to come in contact with equipment with which a lower grade of milk or milk product has been in contact unless such equipment

has first been thoroughly cleaned and subjected to bactericidal treatment.

"Bottled milk or milk products, if stored in water, shall be so stored that the tops of the bottles will not be submerged.

"It shall be the duty of all persons to whom milk or milk products are delivered to clean thoroughly the containers in which such milk or milk products are delivered before returning such containers. Apparatus, containers, equipment, and utensils used in the handling, storage, processing, or transporting of milk or milk products shall not be used for any other purpose without the permission of the health officer.

"The delivery of milk or milk products to and the collection of milk or milk-products containers from residences in which cases of communicable disease transmissible through milk supplies exist shall be subject to the special requirements of the health officer.

2730

DEFENDANT'S EXHIBIT #18

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
			1937		
1222	6- 4-37	Claussen	Ogden Dairy Co. 4333 Ogden Ave. Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
9348	7-13-37	Lynch	"	Qt.	14500 per c.c Beers
9354	8- 2-37	Lynch	"	Pt.	Less than 50 per c.c. Beers
9384	9- 7-37	Lynch	Ogden Dairy Co. 4335 Ogden Ave. Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
13074	10- 6-37	Lynch	Ogden Dairy Co. 4333 Ogden Ave. Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
13106	12- 6-37	Lynch	Ogden Dairy Co. 4335 Ogden Ave. Chicago, Ill.	1/3 Qt.	Less than 50 per c.c. Beers
45713	1-19-37	Larsen	Ogden Dairy Co. 4333 Ogden Ave. Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
45748	4-20-37	Larsen	"	Pt.	Less than 50 per c.c. Beers

2731

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
			1938		
8227	9-12-38		Ogden Dairy Co. 4333 Ogden Ave. Chicago, Ill.	Qt.	Less than 50 per c.c.
8254	10-19-38		"	Qt.	Less than 50 per c.c.
8271	12-12-38		"	Qt.	Less than 50 per c.c.
13247	7-14-38		"	Qt.	Less than 50 per c.c.
13119	1-17-38	Lynch	Ogden Dairy Co., 4335 Ogden Ave., Chicago, Ill.	Pt.	Less than 50 per c.c. Beers
13149	2-15-38	Lynch	"	Qt.	Less than 50 per c.c. Beers
13170	3-14-38	Lynch	"	Pt.	Less than 50 per c.c. Beers
13180	4-19-38	Lynch	"	1/2 Pt.	Less than 50 per c.c. Beers
13202	5-10-38	Lynch	Ogden Dairy Co., 4333 Ogden Ave., Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
13219	6- 6-38	Lynch	"	Qt.	Less than 50 per c.c. Beers
13256	8-16-38	Lynch	"	Qt.	Less than 50 per c.c. Beers

2732

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
25679	10- 4-39	Lynch	Ogden Dairy Co. 4333 Ogden Ave. Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
25681	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25683	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25685	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25687	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25680	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25682	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25684	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25686	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25688	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25689	10- 5-39	Lynch	"	Qt.	100 per c.c. Hlavacek
25691	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Hlavacek
25693	10- 4-39	Lynch	"	Qt.	100 per c.c. Hlavacek
25695	10- 4-39	Lynch	"	Qt.	300 per c.c. Hlavacek
25697	10- 4-39	Lynch	"	Qt.	100 per c.c. Hlavacek
25690	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Hlavacek
25692	10- 4-39	Lynch	"	Qt.	100 per c.c. Hlavacek
25694	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Hlavacek
25696	10- 4-39	Lynch	"	Qt.	150 per c.c. Hlavacek
25698	10- 4-39	Lynch	"	Qt.	Less than 50 per c.c. Hlavacek
8289	2- 8-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
8303	3-16-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
8338	6-14-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25620	7-13-39	Lynch	"	Qt.	Less than 50 per c.c. Gutt
24639	9-12-39	Lynch	"	Qt.	Less than 50 per c.c. Beers

2733

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
28193	9-21-39	Roberts	Ogden Dairy Co., 4341 Ogden Ave., Chicago, Ill.	Pt.	Less than 50 per c.c. Beers
25700	10- 6-39	Lynch	Ogden Dairy Co., 4333 Ogden Ave., Chicago, Ill.	Qt.	Less than 50 per c.c. Ballard
25702	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
25704	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
25706	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
25708	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
28192	9-21-30	Roberts	Ogden Dairy Co., 4341 Ogden Ave., Chicago, Ill.	Pt.	Less than 50 per c.c. Beers
28194	9-21-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beers
28195	9-21-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28196	9-21-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28197	9-21-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28198	9-21-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28199	9-21-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28200	9-21-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28201	9-21-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28202	9-22-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28203	9-22-39	Roberts	"	Pt.	Less than 50 oer c.c. Beers
28204	9-22-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28205	9-22-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28206	9-22-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beers
28207	9-22-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28208	9-22-39	Roberts	"	1/3 Qt.	Less than 50 per c.c. Beers
28209	9-22-39	Roberts	"	Qt.	150 per c.c. Beers
28210	9-22-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28211	9-22-39	Roberts	"	Qt.	Less than 50 per c.c. Beers

2734

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
28212	9-25-39	Roberts	Ogden Dairy Co., 4341 Ogden Ave., Chicago, Ill.	Pt.	Less than 50 per c.c. Beer
28214	9-25-39	Roberts	"	1/3 Qt.	Less than 50 per c.c. Beer
28216	9-25-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beer
28218	9-25-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28220	9-25-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28213	9-25-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28215	9-25-39	Roberts	"	Pt.	Less than 50 per c.c. Beer
28217	9-25-39	Roberts	"	Pt.	Less than 50 per c.c. Beer
28219	9-25-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28221	9-25-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28222	9-26-39	Roberts	"	Pt.	Less than 50 per c.c. Beer
28224	9-26-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beer
28226	9-26-39	Roberts	"	1/3 Qt.	Less than 50 per c.c. Beer
28228	9-26-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28230	9-26-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beer
28223	9-26-39	Roberts	"	Pt.	Less than 50 per c.c. Beer
28225	9-26-39	Roberts	"	Pt.	Less than 50 per c.c. Beer
28227	9-26-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28229	9-26-39	Roberts	"	Qt,	Less than 50 per c.c. Beer
28231	9-26-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28232	9-27-39	Roberts	"	Pt.	Less than 50 per c.c. Beer
28234	9-27-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beer
28236	9-27-39	Roberts	"	1/3 Qt.	Less than 50 per c.c. Beer
28238	9-27-39	Roberts	"	Qt.	Less than 50 per c.c. Beer
28240	9-27-39	Roberts	"	Qt.	Less than 50 per c.c. Beer

2735

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
28233	9-27-39	Roberts	Ogden Dairy Co., 4341 Ogden Ave., Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
28235	9-27-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28237	9-27-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28239	9-27-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28241	9-27-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28242	9-28-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beers
28244	9-28-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28246	9-28-39	Roberts	"	1/2 Pt.	Less than 50 per c.c. Beers
28248	9-28-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28250	9-28-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28243	9-28-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28245	9-28-39	Roberts	"	Pt.	Less than 50 per c.c. Beers
28247	9-28-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28249	9-28-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
28251	9-28-39	Roberts	"	Qt.	Less than 50 per c.c. Beers
29641	9-20-39	Kearney	Ogden Dairy Co., 4333 Ogden Ave., Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
29643	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29645	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29647	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29649	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29642	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29644	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29648	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers
29650	9-20-39	Kearney	"	Qt.	Less than 50 per c.c. Beers

2736

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
25647	9-29-39	Lynch	Ogden Dairy Co., 4333 Ogden Ave., Chicago, Ill.	Qt.	Less than 50 per c.c. Beers
25649	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25651	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25653	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25655	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25648	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25650	9-29-39	Lynch	"	Qt.	
25652	9-29-39	Lynch	"	Qt.	200 per c.c. Beers
25654	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25656	9-29-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25659	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25661	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25663	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25665	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25667	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25660	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25662	10- 2-39	Lynch	"	Qt.	250 per c.c. Beers
25664	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25666	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25668	10- 2-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25669	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25671	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25673	10- 3-39	Lynch	"	Qt.	250 per c.c. Beers
25675	10- 3-39	Lynch	"	Qt.	200 per c.c. Beers
25677	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers

2737

Sample No.	Date Coll.	Collected By	Source	Container	Bacterial Count & Bacteriologist
25670	10- 3-39	Lynch	Ogden Dairy Co., 4333 Ogden Ave., Chicago, Ill.	Qt.	150 per c.c. Beers
25672	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25674	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25676	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25678	10- 3-39	Lynch	"	Qt.	Less than 50 per c.c. Beers
25699	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
25701	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
25703	10- 6-39	Lynch	"	Qt.	Less than 50 per c.c. Ballard
25705	10- 6-39	Lynch	"	Qt.	300 per c.c. Ballard
25707	10- 6-39	Lynch	"	Qt.	300 per c.c. Ballard

2738

30736	9-18-39	Claussen	Ogden Dairy Co., 4333 Ogden Ave., Chicago, Ill.	1/2 Pt.	Less than 50 per c.c. Beers
30737	9-18-39	Claussen	"	1/2 Pt.	Less than 50 per c.c. Beers
30738	9-18-39	Claussen	"	Pt.	Less than 50 per c.c. Beers

DEFENDANT'S EXHIBIT No. 19

Lab. No. of Sample	pH of Paraffin Not Heated			pH of Paraffin After Heating Four Hours				
	Electrometric Determination of pH	Colormetric Determination of pH	Average of Electrometric and Colormetric Determination of pH	Temperature Degrees F.	Electrometric Determination of pH	Colormetric Determination of pH	Average of Electrometric and Colormetric pH Reading	Increase in Acidity of (pH) Due to Heating
4340	7.1	7.1	7.1					
4341	7.0	7.1	7.1					
4342				165°	6.7	6.8	6.8	0.3
4343				165°	6.7	6.8	6.8	0.3
4344	7.1	7.1	7.1					
4345	7.1	7.1	7.1					
4346				175°	6.0	6.1	6.1	1.0
4347				175°	6.0	6.1	6.1	1.0
4348	7.0	7.1	7.1					
4349	6.9	7.0	7.0					
4350				185°	5.7	5.7	5.7	1.4
4351				185°	5.7	5.8	5.8	1.2

The above table indicates that, when paraffin is heated, some of the paraffin is decomposed into acid products. This decomposition increases with rise of temperature.

MJM:ACW

Defendant's Exhibit No. 19.

2740

DEFENDANT'S EXHIBIT 20

Test started 3-26-30
1% dextrose broth

Experiment No. 16

	B. Coli						Hemolytic Streptococcus						Prodigious						Pyocyaneus						Staphylococcus						B. Typhosus					
	Wet Hours			Dry Hours			Wet Hours			Dry Hours			Wet Hours			Dry Hours			Wet Hours			Dry Hours			Wet Hours			Dry Hours			Wet Hours			Dry Hours		
	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72	24	48	72
1. Plaque	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2. Organisms	—	—	—	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3. Paraffin	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4. Uncrinkled	—	—	—	+	+	+	—	—	—	—	—	—	—	—	—	+	+	+	—	—	—	+	+	+	—	+	+	+	+	+	—	+	+	—	—	—
5. Uncrinkled	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	—	(+)	(+)
6. Uncrinkled	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	+	+	—	—	—
7. Crinkled	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	—	—	—	—	—	—	—	+	+
8. Crinkled	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	—	(+)	(+)	—	—	—	+	+	+	—	—	—	—	—	—	—	—	—	—	—	—
9. Crinkled	—	—	—	+	+	+	—	—	—	+	+	+	—	—	—	—	—	—	—	—	—	+	+	+	—	—	—	—	—	—	—	—	—	—	—	—
	0			6			0			5			1			4			0			6			1			3			2			1		

+ Growth of test organisms.
— No growth of any organisms
(+)Growth of organisms, but not test organisms
Wet—Plaques moistened as stated in report
Dry—Plaques allowed to dry in oven as stated in report.

Crinkled—Plaque crinkled.
Uncrinkled—Plaque intact.

10. Uncrinkled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11. Uncrinkled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	+	
12. Crinkled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	+	
13. Crinkled	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
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																																		2		3

DEFENDANT'S EXHIBIT 21

2741

Test Started March 29, 1939.

Experiment No. 17

Staphylococcus Aureus

		Wet				Dry			
		24 Hours	48 Hours	72 Hours	Confirmed	24 Hours	48 Hours	72 Hours	Confirmed
1	Plaque	−	−	−		−	−	−	−
2	Organisms	+	+	+		+	+	+	
3	Paraffin	−	−	−		−	−	−	
4	Uncrinkled	−	+	+		+	+	+	
5	Uncrinkled	−	+	+		+	+	+	
6	Uncrinkled	−	−	−		D	+	+	
7	Uncrinkled	−	+	+		+	+	+	
8	Uncrinkled	D	+	+		−	+	+	
9	Uncrinkled	−	+	+		+	+	+	
10	Uncrinkled	−	−	−		+	+	+	
11	Uncrinkled	−	−	−		+	+	+	
12	Uncrinkled	−	+	+		+	+	+	
13	Uncrinkled	−	−	−		+	+	+	
14	Uncrinkled	−	+	+		+	+	+	
15	Uncrinkled	−	+	+		−	−	−	
16	Uncrinkled	−	+	+		−	+	+	
17	Uncrinkled	−	+	+		+	+	+	
18	Uncrinkled	−	+	+		+	+	+	
19	Uncrinkled	−	+	+		−	−	−	
20	Uncrinkled	−	−	−		−	−	−	
21	Uncrinkled	−	−	−		−	+	+	
22	Uncrinkled	−	−	−		+	+	+	
23	Uncrinkled	−	+	+		+	+	+	
24	Uncrinkled	−	−	+		+	+	+	
25	Uncrinkled	−	−	−		+	+	+	
26	Uncrinkled	−	+	+		+	+	+	
27	Uncrinkled	−	+	+		−	−	−	
28	Uncrinkled	−	−	−		+	+	+	
29	Crinkled	−	−	−		−	+	+	
30	Crinkled	−	−	−		+	+	+	
31	Crinkled	−	+	+		−	+	+	
32	Crinkled	−	−	−		+	+	+	
33	Crinkled	−	−	−		D	+	+	
34	Crinkled	−	−	−		−	+	+	
35	Crinkled	−	−	−		+	+	+	
36	Crinkled	−	−	−		+	+	+	
37	Crinkled	−	−	−		+	+	+	
38	Crinkled	−	+	+		D	+	+	
39	Crinkled	−	−	−		+	+	+	
40	Crinkled	−	−	−		+	+	+	
41	Crinkled	−	−	−		−	+	+	
42	Crinkled	+	+	+		+	+	+	
43	Crinkled	−	−	−		+	+	+	
44	Crinkled	−	+	+		+	+	+	
45	Crinkled	−	−	−		+	+	+	
46	Crinkled	−	−	−		−	+	+	
47	Crinkled	−	−	−		+	+	+	
48	Crinkled	−	−	−		+	+	+	
49	Crinkled	−	−	−		+	+	+	

2742 DEFENDANT'S EXHIBIT 21

Experiment No. 17—Continued

		Wet				Dry			
		24 Hours	48 Hours	72 Hours	Confirmed	24 Hours	48 Hours	72 Hours	Confirmed
50	Crinkled	—	—	—		—	+	+	
51	Crinkled	—	—	—		—	+	+	
52	Crinkled	—	—	—		+	+	+	
53	Crinkled	—	—	—	20+	+	+	+	46+
		2	19	20		36	46	46	
	Comparison Efficiency Tests of Wet and Dry Plaques at Various Temperatures								
65°C	149°F	+	+	+		+	+	+	
70°C	158°F	—	—	—		+	+	+	
75°C	167°F	—	—	—		+	+	+	
80°C	176°F	Test Temperature				Test Temperature			

— No growth.
\+ Growth of test organism confirmed.
(+) Growth other than test organisms.
D Doubtful growth.

April 3, 1939.

2743 DEFENDANT'S EXHIBIT NO. 22.

January 13, 1936.

Dr. Herman N. Bundesen
Board of Health,
Chicago, Ill.

Dear Dr. Bundesen:

We would like to make application to meet the Board of Health as soon as possible in order to present to them the facts regarding delivering milk to the City of Chicago in paper containers instead of bottles.

At that time we will be very glad to have all the facts and figures on what is going on in other cities, like Philadelphia, New York, etc., and will appreciate it very much if you can get permission for us to be present at the next meeting of your Board.

Awaiting your reply, and thanking you for many past favors, we are

Yours truly
Dean Milk Company.

SED:LD.

2744 DEFENDANT'S EXHIBIT NO. 23.

August 2, 1938

Dr. Herman N. Bundesen, President
Board of Health
City Hall
Chicago, Illinois

Dear Dr. Bundesen:

Thank you for your letter of July 25, written in reply to my letter of July 8, which I had addressed to Mr. Paul Krueger, of your Department, and in which we again respectfully requested permission be granted to milk plants located in the City of Chicago to distribute their dairy products in Pure-Pak single service containers in your city.

While, in your direct reply to my letter, you did not state your current position in regard to Pure-Pak containers, you did enclose a carbon copy of a letter written by you, July 22, and addressed to Mr. S. E. Dean, Jr., which does explain your present attitude . . . which is extremely interesting to us.

With reference to the third paragraph of your letter to Mr. Dean—particularly to the fact that your records are not in accordance with the statement in Mr. Dean's letter, regarding favorable reports from investigators—I would like to say, Dr. Bundesen, that, in all investigations we have had conducted by nationally accepted leaders in bacteriology, research, and dairy husbandry, we, too, have found all of them favorably impressed with the sanitary aspects of Pure-Pak containers.

Not having a copy of Mr. Dean's letter to you, nor any knowledge of its contents, we, of course, do not know to whom he referred as a "committee". Neither do we know which member of the "committee" is not in accordance with Mr. Dean's statement, according to your records. However, if you will let us know which member is not in accordance, and what his objections are, we shall be more than glad to get in touch with him and make available to him all data, and make every possible effort to clear up any points about which this gentleman is still doubtful. Will you be kind enough to submit this information to us?

We are aware of the fact that you enforce in Chicago

the Milk Ordinance of the U. S. Public Health Service. We believe this is a very fine procedure on your part, and that the laws of milk sanitation would be generally upon a higher plane today if all local health ordinances followed more closely—at least in spirit—to the model
2745 ordinance laid down by the U. S. Public Health Service.

You see, Dr. Bundesen, we in the single service paper milk bottle industry—and I am speaking particularly for Pure-Pak—have absolutely no quarrel with the National Milk Code and Ordinance, nor with those authorities who operate under it. The National Code and Ordinance is in no way, either in letter or spirit, antagonistic towards single service containers. True, its fundamental principles were written a great many years ago, and would not include the present, more sanitary milk receptacle—because it was then unknown.

We do feel, however, that the omission of reference to single service containers should not deter progressive health authorities, in this country, from the acceptance of something new in milk sanitation, if the thing, or method, is proven to be better by a preponderance of evidence, as is the case with the single service container.

For a period of about 8 months, I have personally kept in very close touch with the sanitary development of single service containers, and with those authorities who have been making detailed investigations as to their merits. Among a great many other authorities have been individuals in the U. S. Public Health Service—particularly Mr. Leslie C. Frank.

Immediately upon receipt of your letter of July 25, I took the liberty of contacting Mr. Frank by telephone in Washington, D. C., and asked him to advise me as to the progress being made toward identifying single service containers by inserting regulatory paragraphs governing their distribution in the National Ordinance.

Mr. Frank told me that a great deal of progress had been made. In fact he told me that his department had completed a "modification of the U. S. Public Health Service Ordinance and Code, to provide for the use and sanitary control of single service containers", and that these modifications had been mailed to each member of his National Advisory Board, for consideration prior to their vote of acceptance or rejection at the forthcoming meeting in Washington.

Now, Dr. Bundesen, we know that you enforce the U. S. Public Health Service Milk Ordinance and Code in your city. The ordinance, as now written, is not antagonistic or unfriendly to single service containers. Mr. Frank has told me that a tentative ordinance for the use and sanitary control of single service containers has already been written by his department. You say that you "look to the U. S. Public Health Service for technical advice with respect to public health problems. The U. S. Public
2746 Health Service has seen fit to recognize single service containers by issuing tentative modification of the code for their use and control. I wonder, then, if this fact will be accepted by you as sufficient evidence that there are no health hazards involved in the use of Pure-Pak containers for dairy products. If so, will you now give us permission to move equipment into Chicago? You could then personally go over the sanitary angles of same, under actual dairy conditions, with a view toward issuing us the necessary permit to begin operations in your city.

I want to assure you of my most sincere appreciation of your consideration of this request, and thank you for a reply at your earliest convenience.

Very truly yours,

.....

Sales Manager—Pure-Pak Division
Ex-Cell-O Corporation.

GDS:L

DEFENDANT'S EXHIBIT NO. 24 is omitted at this point as it appears as Exhibit A to the Defendant's Answer.

2786 DEFENDANT'S EXHIBIT NO. 25.

Resolution.

The following Resolution was adopted as a part of the rules and regulations of the Board of Health at its meeting of August 6, 1935:

Whereas, it has come to the attention of the Board of Health of the City of Chicago that butter made from cream from unhealthy cattle has been shipped into the city of Chicago for human consumption; and

Whereas, this condition, if allowed to prevail, will become a distinct health menace to the City of Chicago; and

Whereas, There is not now in force and effect in the city of Chicago any ordinance or rule or regulation of the Board of Health of the City of Chicago affecting the general sale of butter within the said City of Chicago; and

Whereas, It becomes necessary to provide conditions governing the sale and distribution of butter in the city of Chicago; therefore

Be It Resolved By the Board of Health of the City of Chicago, County of Cook and State of Illinois that:

1. It shall be unlawful for any person, firm or corporation to sell, offer for sale or have in his possession for the purpose of selling or giving away to any person or persons in the city of Chicago, County of Cook and State of Illinois any butter other than that made of cream from healthy cows from officially accredited tuberculin tested areas;

2. When butter is sold or offered for sale in the City of Chicago there shall appear on the label the following certification:

"Made of cream from healthy herds from officially accredited tuberculin tested areas";

3. The Board of Health of the City of Chicago or its authorized agents shall seize and condemn any butter sold, offered for sale or given away in the City of Chicago if said butter does not conform to the requirements set forth in sections 1 and 2 of this resolution.

Herman N. Bundesen, M.D.
President, Board of Health.
Louis E. Schmidt, M.D.
Secretary, Board of Health.

Date of publication:
Aug. 10, 1935.

2787 DEFENDANT'S EXHIBIT NO. 26.

Resolution.

The following Resolution was adopted as part of the rules and regulations of the Board of Health at its meeting on November 12, 1935:

Whereas, the present increase in the number of cases of scarlet fever in the city of Chicago is increasing the possibility of milk-borne infections, and

Whereas, it now becomes urgent and necessary for milk and milk products used in the city of Chicago to be dispensed only in unopened original containers, as received from the distributor, therefore

Be it resolved, that all milk and milk products shall be sold, served or dispensed to the final consumer only in unopened original containers as received from the distributor; and no fractional portion or part of any original package or container shall be served or dispensed for consumption, except for manufacturing purposes.

Herman N. Bundesen, M.D.
President, Board of Health.
Louis E. Schmidt, M.D.
Secretary, Board of Health.

2788 DEFENDANT'S EXHIBIT NO. 27.

Resolution.

Whereas, Section 3092 of the Mayor Kelly Milk Ordinance specifies that bacterial plate counts of milk and milk products shall be made in conformity with the latest standard methods recommended by the American Public Health Association, or any other method approved by the Board of Health, and

Whereas, A new seventh edition (1939) of standard methods of milk analysis, bearing the title "Standard Methods for the Examination of Dairy Products", has been issued by the American Public Health Association, and

Whereas, Changes in this edition, as published in the December, 1938, issue of the Journal of the American Public Health Association, include a provision that beginning July 1, 1939, tryptone, glucose, skim-milk agar be used to make bacterial plate counts of milk, and

Whereas, Experience indicates that we may expect higher bacterial counts with this medium than with the standard agar at present used for this work, and

Whereas, The standards for allowable bacterial counts, as expressed in the Mayor Kelly Milk Ordinance, were established from a consideration of the data obtained in the determination of bacterial counts with the standard agar, as specified in the sixth edition (1934) of the Standard Methods of Milk Analysis of the American Public Health Association, and

Whereas, The media recommended in the seventh edition of the American Public Health Association Standard is an enrichment media, and the bacterial counts would consequently be two, three, or more times above those obtained by methods recommended in the sixth edition (1934); therefore; be it

2789 Resolved, That until further notice the bacterial plate counts of milk and milk products be made by the Department of Health in accordance with the standard procedure as published in the sixth edition (1934) of Standard Methods of Milk Analysis of the American Public Health Association.

Herman N. Bundesen, M.D.
President, Board of Health.
Francis A. Dulak, M.D.
Secretary, Board of Health.

Published July 18, 1939.

DEFENDANT'S EXHIBIT NO 28 is omitted at this point as it appears in the record as the Stipulation filed June 29, 1939 in the District Court.

2800 DEFENDANT'S EXHIBIT 29.

The following Resolution was introduced by Doctor Bundesen, asking the City Council to modify the milk ordinance so that single service containers may be used in Chicago:

Since my only concern as President of the Chicago Board of Health with regard to paper containers has been to have as positive assurance as possible that fresh fluid milk can safely be delivered in such containers, and

Because the U. S. Public Health Service, whose standard milk ordinance has been adopted by the City of Chicago

has not heretofor included definite standards for the manufacture of single service containers, and

Because it was believed that we would not be acting in the best interests of safety in permitting the use of these containers until the U. S. Public Health Service had adopted suitable regulations for their manufacture and use, and

Because we have in the past followed closely the requirements of the Service, it was deemed advisable to prohibit the use of these containers in the absence of such regulations, and

Since it has now been brought to our attention that such standards have now been adopted by the Service, it is moved that

The Board of Health recommend to the City Council that Section 154-15 of the Municipal Code of Chicago be amended by adding the words "or in single service containers" after the words "standard milk bottles" in the third sentence of such section, and

That the Board adopt such standards as have been promulgated and recommended by the U. S. Public Health Service for the manufacture and handling of single service containers and which are herewith attached.

2801 U. S. Public Health Service
Washington.

October 7, 1939.

(Section 10 as it will appear in the 1939 printed Public Health Service Milk Code.)

"Sec. 10. Transferring or Dipping Milk; Delivery Containers; Handling of More Than One Grade; Delivery of Milk at Quarantined Residences.

"Except as permitted in this section, no milk producer or distributor shall transfer milk or milk products from one container to another on the street, or in any vehicle or store, or in any place except a bottling or milk room especially used for that purpose. The sale of dip milk is hereby prohibited.

"All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized, and all raw milk and milk products sold for consumption in the raw state shall be placed in their final delivery containers at the farm at which they are produced. Milk and milk products sold in the distributors'

containers in quantities less than one gallon shall be delivered in standard milk bottles or in single-service containers. It shall be unlawful for hotels, soda fountains, restaurants, groceries, and similar establishments to sell or serve any milk or milk product except in the original container in which it was received from the distributor or from a bulk container equipped with an approved dispensing device; Provided, That this requirement shall not apply to cream consumed on the premises, which may be served from the original bottle or from a dispenser approved for such service. It shall be unlawful for any hotel, soda fountain, restaurant, grocery, or similar establishment to sell or serve any milk or milk products which have not been maintained while in its possession, at a temperature of 50° F. or less.

"No milk or milk products shall be permitted to come in contact with equipment with which a lower grade of milk or milk product has been in contact unless such equipment has first been thoroughly cleaned and subjected to bactericidal treatment.

"Bottled milk or milk products, if stored in water, shall be so stored that the tops of the bottles will not be submerged.

2802 "It shall be the duty of all persons to whom milk or milk products are delivered to clean thoroughly the containers in which such milk or milk products are delivered before returning such containers. Apparatus, containers, equipment, and utensils used in the handling, storage, processing, or transporting of milk or milk products shall not be used for any other purpose without the permission of the health officer.

"The delivery of milk or milk products to and the collection of milk or milk-products containers from residences in which cases of communicable disease transmissible through milk supplies exist shall be subject to the special requirements of the health officer.

"The purpose of this section is to prevent, so far as practicable, exposing the milk to contamination from the time it is placed in its container at the dairy or milk plant until the time it is delivered to the final consumer. The practice, formerly quite prevalent, of transferring milk from a bulk container located in the delivery vehicle to the household container, either by dipping or by drawing from a faucet, is dangerous because of the opportunity for contamination

by dust and flies or manually. This practice has now practically died out, but may occasionally be discovered by the inspector.

"Another practice on the part of some distributors, still occasionally observed, is the filling of returned bottles, which have not been treated with a bactericide, with milk or milk products along the milk route, particularly at retail depots. This section expressly forbids this practice.

"The use of standard milk bottles or single-service containers for delivering milk and milk products in quantities less than one gallon is required in order to prohibit delivery in such containers as buckets, fruit jars, etc., which may be difficult to wash and to subject to adequate bactericidal treatment, which cannot be filled and capped with the proper equipment used for these purposes, and which it is often difficult to label properly.

"The portion of this section dealing with the method of selling or serving of milk or milk products in restaurants, groceries, etc., is designed to prevent contamination of the milk in handling or serving. Such contamination is frequently observed in the dipping of milk from a bulk container into the container or glass in which it is sold or served to the customer, the container or glass frequently overflowing and the milk coming in contact with the fingers and then dripping back into the bulk container from which it was dipped. Furthermore, even if milk is poured into glasses from bottles in the kitchen there is more opportunity for carelessness and consequent contamination than if it is served in the original container, because the transferring is done out of sight of the customer.

2803 "The selling or serving of milk in the original container has been found to be practical. In fact, many establishments report increased sales because of the reaction of the consumer to the improved service sanitation, and to the fact that he is assured of receiving all of the cream in the original container.

"However, there are rapidly being developed sanitary bulk dispensers which may result in reducing the cost of milk distribution. For this reason this section is so worded as to permit the selling or serving of milk or milk products from approved sanitary bulk dispensers which insure correct mixing of the milk and cream. The health officer should not approve any bulk dispenser which does not satisfy the following design and operation requirements:

"(1) It shall comply with the requirements of item 10p, construction and repair of equipment.

"(2) No surfaces with which milk or milk products come in contact shall while in use be accessible to manual contact, droplet infection, dust, or flies, but the delivery orifice may be exempted from this requirement.

"(3) All parts of the dispensing device with which milk comes in contact, including any measuring device, shall be cleaned and subjected to bactericidal treatment at the milk plant, not at the retail vendor's establishment.

"(4) The dispensing device shall be filled and sealed with two seals at the milk plant in such manner as to make it impossible to withdraw any part of its contents without breaking one seal and impossible to introduce any substance without breaking the other.

"(5) It shall mix the milk and cream thoroughly and automatically with each dispensing operation. This requirement may be waived in the case of milk products which remain homogeneous without mixing.

"In the case of milk drinks mixed at soda fountains, etc., this section shall be interpreted as requiring that the milk used shall include the entire contents of the original container or shall be from an approved bulk dispenser. The sanitary control of methods used in mixing such milk drinks is considered to be within the province of a restaurant or food ordinance rather than the milk ordinance.

"In enforcing this section the health officer may make an exception in the case of cream served with coffee, cereals, etc., as in this case it is impracticable to serve in the original container because of the fact that it is impossible for the distributor to deliver cream to the establishment in the unit-size containers which would be required in each case. Furthermore, the use of expensive bulk dis-
2804 pensers as described above may not be defensible requirement for all soda fountains, restaurants, and similar establishments in the case of cream used for coffee, cereals, etc. For such service the health officer may permit transferring from the original bottle, or from a pump, urn, or other dispenser which complies with requirements (1) and (2) above, and which is filled in a sanitary manner, kept clean, and frequently subjected to bactericidal treatment complying with the requirements of item 12p.

"Bottled milk should not be submerged in water for cooling because the contraction of the contents accompanying the cooling process may create a sufficient vacuum within the bottle to suck in water around the edge of the cap. Tests have shown that milk may thus be contaminated."

2805 Treasury Department

In replying
Address the Surgeon General U. S. Public Health Service
U. S. Public Health Service

Washington
Sanitation Section June 27, 1939.
D. Q. Division

Public Health Service Sanitation Advisory Board Action on Single Service Containers, Etc. at June 1939 Meeting.

The following sentence is to be added to items 10p and 12r of the forthcoming 1939 printed edition of the Public Health Service Milk Ordinance:

"The manufacture, packing, transportation, and handling of single-service containers and container caps and covers shall be conducted in a sanitary manner."

The following paragraph is to be added to Public Health Reason under items 10p and 12r:

"Single-service containers, etc. which have not been manufactured and handled in a sanitary manner may contaminate the milk."

The following material is to be added under Satisfactory Compliance of items 10p and 12r:

"(5) The manufacture, packing, transportation and handling of single-service containers and container caps and covers are conducted in accordance with the following requirements. Inspections required herein may be made by the health officer or by any agency authorized by him.

(a) The buildings and rooms in which single-service containers and container caps and covers are manufactured, packed, stored, and handled shall be clean, well lighted and ventilated, and free of dust and flies, as prescribed in items 1p, 2p, 3p, 4p, 6p, 7p, 8p, and 11p.

(b) The average bacterial plate count of the stock from which single-service containers and container caps and covers are made shall not exceed 100 colonies per gram. No substance shall be present in finished single-service containers and container caps and covers which is toxic.

(c) All operations at the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13p, 14p, and 15p.

2806 (d) All of those parts of machinery and equipment with which the article being manufactured comes in contact shall be kept clean.

(e) All single-service containers and container caps and covers shall be so treated as to be as impervious to milk and milk products as practicable.

The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a non-absorbent non-flaking surface.

(f) All single-service containers and container caps and covers shall prior to use be given bactericidal treatment equivalent to contact with paraffin for at least 30 seconds at at least 180° F.* in approved equipment operated in an approved manner. The bactericidal treatment equipment shall be provided with approved indicating and recording thermometers, and shall be so designed as automatically to insure the required temperature and contact time.

* This time-temperature subject to change as a result of further studies being conducted by National Institute of Health.

2807 **DEFENDANTS' EXHIBIT 30.**

TREASURY DEPARTMENT
U. S. Public Health Service
Washington

(Cut)

In Replying
Address the Surgeon General
U. S. Public Health Service
(Stamp) Received Jul 5—1939 Board of Health

June 27, 1939

Dr. Herman N. Bundesen
President, Board of Health
Chicago, Illinois

Dear Dr. Bundesen:

In response to your communication of June 23, there is attached a copy of the regulations governing the manufacture, packing, transportation, and handling of single-service containers, milk bottle caps and covers, as adopted by the Public Health Service Sanitation Advisory Board at its June 1939 meeting.

Very truly yours,
Thomas Ranan
Surgeon General

Enc.
WND:hb
CC: State Health Officer
CC: Dr. Haskell

2808 **DEFENDANTS' EXHIBIT 31.**

Proposed Standards for Paper Milk Containers:

The Dairy Products Section of the Chicago Board of Health reported through Dr. Arnold that experiments concerning the use of paper containers for the distribution of milk and milk products have been continued, and further studies have been made of the literature which has been published pertaining to this subject, and that, from this further study, the Dairy Products Section has formulated requirements pertaining to the use of paper containers.

Doctor Arnold stated that it was his judgment, and the judgment of the Dairy Products Section, that the use of paper containers may be permitted, without attendant hazards to the public health, when the principles of the requirements enumerated below are complied with and carried out.

Doctor Arnold also stated that the requirements enumerated below are substantially identical with the following suggestions which have previously been made by this section:

"The following general principles should be followed in the consideration of the sanitary quality of single service paper containers for milk and milk products.

The surface of the container in contact with milk shall be smooth and unbroken. The surface of the container in contact with milk shall be impermeable and nonporous.

The surface of the container in contact with milk shall be sterile or constructed of such materials that it can be disinfected in the dairy before use.

The contents of the container shall not be contaminated by microorganisms, chemicals or other substances contained in the material forming the wall."

The following proposed standards to be met by paper milk containers were prepared by the dairy inspection section and were approved by Doctor Arnold. They were submitted to the Board by Doctor Arnold, and, after discussion, motion was made by Doctor Arnold, seconded by Mr. Reynolds and carried, that it is the sense of the Board that the use of paper containers may be permitted without attendant hazards to public health when the principles of the following proposed standards are carried out:

2809 Proposed Standards To Be Met by Paper Milk Containers

1. The surfaces of paper milk containers coming in contact with milk shall be impermeable and non-porous, and shall be smooth and unbroken. Paraffin-immersion treatment, as employed at present, is not considered as meeting this definition.

2. The surface of the container in contact with milk shall be sterile or constructed of such materials that it can be disinfected in the dairy before use.

3. The material forming the surface shall be inert and

of such composition that it will not react with milk, or "flake-off" into the milk. No toxic material which may be deleterious to health shall be present in paper, moisture-proofing materials, adhesives or other materials used in the manufacture or subsequent treatment of paper milk containers.

4. Containers shall be made from virgin pulp or other suitable material and such board or material, prior to moisture-proofing, shall not have a bacterial count exceeding 500 colonies per gram.

Paper and similar materials to be used in the fabrication of milk containers shall be manufactured under the supervision and inspection of an official agency such as the United States Public Health Service. Such materials shall be manufactured under sanitary conditions and the plant, surroundings, equipment and method in paper
2810 mills and conversion plants shall meet the requirements of the United States Public Health Service for grade A milk plants.

Paper rolls, packages or boxes in which milk containers or materials for fabricating milk containers are shipped shall bear an approval stamp of the official inspection agency and such stamp shall identify, by number or other approved method, the source of the product.

Only water meeting the Federal standard for safe drinking water shall be used in the treatment of pulp or other materials and in any subsequent treatment of containers.

Unless used immediately after manufacture, container blanks shall be wrapped, sealed and protected from contamination until used. When used the outside sheet on rolls or the top and bottom sheets of sheeted stock shall be discarded in all cases.

5. All stock and containers shall be handled mechanically in the conversion plant as far as possible. Following fabrication, until final filling and sealing in the milk plant, container surfaces with which milk or milk products come in contact shall be protected from contamination.

6. Throughout the processes of printing, folding, sealing, adhesive application, or packing prior to shipment to milk plant, all stock and containers shall, as far as
2811 feasible, be handled mechanically and be suitably wrapped or packaged before shipping.

Packaged container stock at milk plants shall be kept in a clean, dry place and opened only for immediate use. Where it is necessary to form or manipulate containers,

all surfaces with which milk or milk products may come in contact, shall be protected from human handling.

7. The gluing or sealing of container board shall be accomplished by means of non-fermentable adhesives. Adhesives must not contaminate containers in any manner, nor contain any substance in amounts detrimental to health.

8. Cases for shipping empty containers shall be constructed of board or wrapping designed adequately to protect containers from injury or abuse due to tearing or breaking. Containers shall be stored in sealed, dry, unbroken cases, in a dry, vermin-proof location. Partly empty shipping cases of prefabricated containers shall be resealed, rewrapped, or otherwise protected from contamination during storage. Empty containers shall not be exposed to contamination at any time.

The opening of shipping cases and the storing of containers shall be done in a room separate from other milk handling equipment.

9. Equipment used for moisture-proofing, bactericidal treatment, filling or otherwise handling paper or similar materials to be used for milk containers shall conform to the requirements of the United States Public Health Service for milk handling equipment used in grade A milk plants.

10. In the filling and handling of the container, milk shall be so handled to prevent adulteration, and the contents of the container shall not be contaminated by microorganisms, chemicals or other substances contained in the material forming the wall.

May 11, 1939.

2475 And on, to wit, the 27th day of April, A. D. 1940 came the Defendants by their attorneys and filed in the Clerk's office of said Court their certain Objections to Depositions in words and figures following, to wit: Filed Apr. 27, 1940.

2476 IN THE DISTRICT COURT OF THE UNITED STATES.
• • (Caption—316) • •

OBJECTIONS TO DEPOSITIONS.

Filed Feb. 14, 1940. Jacob I. Grossman, Master in Chancery.

The defendants object to the following portions of the depositions offered in evidence in this case upon the grounds stated below:

1. To all testimony contained in the depositions taken in New York City on April 25, 1939 and at Philadelphia, Pennsylvania on April 27, 1939, which pertains to the use of paper containers for milk in municipalities other than the City of Chicago, upon the ground that such testimony is neither relevant nor material to any issue in this case.

2. (a) To plaintiff's Exhibits 5, 6, 7, 8 and 10 (letters identified during the taking of depositions at Philadelphia on April 27, 1939) because each of said exhibits is incompetent in that it contains statements of the opinion of the respective writer concerning the sanitary qualities of paper milk containers. These statements and the ex-
2477 hibits containing them constitute secondary and hearsay evidence and their admission would deny to the defendants their right of cross-examination.

(b) Said exhibits were identified and offered as permits received from various municipalities. It appears from the face of each of the exhibits that they are not such permits but are letters written at the solicitation of a witness for the plaintiff. (Philadelphia Deposition, pp. 66-72.)

Barnet Hodes,
Corporation Counsel.
Walter V. Schaefer,
Assistant Corporation Counsel.
Charles P. Horan,
Assistant Corporation Counsel.
Attorneys for Defendants.

Filed Apr. 27, 1940. 2452 And on, to wit, the 27th day of April, A. D. 1940, there was filed in the Clerk's office of said Court a certain Master's Report in words and figures following, to wit:

2454 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

MASTER'S REPORT.

Pursuant to the reference I held hearings at which the following were present: Messrs. Gariepy & Gariepy, by Mr. Fred A. Gariepy, representing the plaintiff, and Mr. Barnet Hodes, Corporation Counsel of the City of Chicago, by Messrs. Walter V. Schaefer and Charles P. Horan, Assistant Corporation Counsel representing the defendants. At the same time, the evidence was being taken as a deposition in the case of Ex-Cell-O Corporation *vs.* City of Chicago, et al., D. C. No. 456, pending in this court. The attorneys for the plaintiff in that case were Messrs. Eckert & Peterson and Mr. Owen Rall, who appeared by Mr. Owen Rall.

2455 Plaintiff asks for an injunction to restrain defendants, the City of Chicago and the Board of Health of the City, from interfering with plaintiff's sale of milk in Pure-Pak paper milk containers. It also asks for a declaratory judgment that paper milk bottles are "standard milk bottles" within the meaning of the Chicago Milk Ordinance, so that the ordinance does not prohibit the use of said containers; and, in the alternative, if those containers are not standard milk bottles and are prohibited, that the ordinance and regulations thereunder are invalid.

Plaintiff applied for a permit to use single service containers in Chicago. The Board of Health neither granted nor denied the application. In July 1938, on the ground that the safety of paper containers had not yet been established, the Board stated to plaintiff that it was waiting the recommendation of the United States Public Health Service, whose model ordinance and advice furnish the lead for municipalities throughout the country (Stipulation, quoted in ptfs. brief pp. 18-19). Plaintiff, having asked in January 1939 for a permit, filed this suit in Feb-

ruary 1939. In June 1939 the Sanitation Advisory Board of the United States Public Health Service made a report (Ptfs. Ex. 61) in which among other things it recommended that the model ordinance should be amended so as to include paper containers in addition to standard milk bottles. In that report, however (p. 3), the Board included a criticism of paper containers, as follows:

"The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a non-absorbent non-flaking surface."

In October 1939 the United States Public Health Service amended its model ordinance to add paper containers (Ptfs. Ex. 92; Defts. Ex. 29; Rec. 1567). Thereafter on October 16, 1939, the Chicago Board of Health recommended to the City Council similar action.

In the meantime hearings in this suit had begun and were being held at such times as expert witnesses from other states could appear. The defendants' case was closed on October 13, 1939. On October 16, 1939, the Board of Health made its recommendation to the City Council. On October 19, 1939, defendants requested and were granted leave to reopen proofs and submit further testimony. Accordingly on October 23rd the defendants offered further evidence and again closed their case. The plaintiff completed its proofs on October 26th. The recommendation of the Board of Health was referred by the Council to its Committee on Health. While the matter was under consideration by the Committee, plaintiff's brief was not filed before me. On November 22, 1939, the Committee on Health voted to defer action upon an amendment to the ordinance pending the outcome of this case. Thereafter briefs were filed in the case at bar,—the plaintiff's brief on December 19, 1939, the defendants' brief on January 27, 1940, and the plaintiff's reply brief on February 15, 1940. Further proceedings were had in the case on March 9, 1940, the transcript of which is made a part of the record. Additional memoranda based upon those
2456 further proceedings were filed on March 15, 1940, and on April 13, 1940. On April 26, 1940, the record was reopened for the purpose of formally incorporating certain facts pertaining to the action of the City Council. The record consists of 2214 pages which I certify as com-

plete, true, and correct, and a number of exhibits, which are herewith transmitted.

Plaintiff is a Michigan corporation licensed to do business in Illinois. It has a milk plant at Chemung, Illinois, and sells milk at wholesale and at retail in a number of cities and villages in Illinois. In quantities of less than one gallon it delivers its milk only in Pure-Pak paper containers and does not use glass milk bottles. In the expectation that it would be permitted to use its paper containers for the sale of milk in Chicago, it obtained contracts for such sale in Chicago, and, in order to fulfill the contracts, it purchased a number of milk trucks and other equipment, and made contracts with milk producers for a large supply of milk. On account of its inability to sell the milk in paper containers in Chicago, it has been unable to use it trucks and equipment which as a consequence have suffered a large depreciation in value, it has had to take large losses on the milk supply which it had contracted to purchase, and has lost the profit which it would have made from such sales in Chicago.

I find that the matter in controversy exceeds, exclusive of interest and costs, the sum or value of $3,000 and is between citizens of different states, and that the court has jurisdiction of the subject matter and the parties.

Section 3094 of the Revised Chicago Code (Defts. Ex. 24, p. 76) provides (italics added):

"* * * All pasteurized milk and milk products shall be placed in their final *delivery* containers in the plant in which they are pasteurized, and all certified milk and milk products sold for consumption in the raw state shall be placed in their final *delivery* containers at the farm at which they are produced. Any milk or milk products sold in quantities of less than one gallon shall be *delivered* in *standard milk bottles; provided, however,* that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants, and similar establishments from *dispensing* milk or milk products from sanitary *dispensers* approved by the board of health."

The issues are whether plaintiff's paper container is a "standard milk bottle" within the meaning of the Chicago Milk Ordinance, and, if not, whether the ordinance is invalid. Both parties take the position that if the paper container is not a standard milk bottle, the ordinance prohibits the use of paper containers.

A paper container is not a "standard milk bottle":

Plaintiff's container is a prismatic box about 6½ inches high and 4½ inches wide, with a gable top, made of paper and paraffined on the inside and outside (Rec. 508). In the middle of one of the slanting surfaces of the gable top is a so-called pouring lip which is about an inch square and which is pulled out like an ear when milk is to be poured out of the container.

On January 4, 1935, when the ordinance was passed, the standard milk bottle was, and up to the present time in Chicago has been, made of glass. Glass milk
2457 bottles have constituted a distinct and definite class of bottles (see Report of U. S. Biennial Census of Manufacturers for 1935, quoted in defts. brief p. 9). Dr. Tracy, plaintiff's witness, testified that if he were selling milk at retail in Chicago, the term "standard milk bottle" would mean to him a glass milk bottle of a certain size and shape (Rec. 681-4). Its shape has certain general characteristics, of which courts will take judicial notice,—narrower at the top than at the bottom and bulging to its full width at about the middle of the bottle. It is quite apparent that a person of average intelligence would experience no difficulty in selecting a milk bottle from an array of other bottles.

On the other hand, paper containers are of comparatively recent development and were not in contemplation at the time the ordinance was passed. To classify plaintiff's paper container as a "bottle" would require considerable straining of the definitions of a bottle.

The general understanding of standard milk bottles has always been that they are of the familiar shape and are made of glass. This is reflected by the rules and regulations approved by the United States Public Health Service and by the City of Chicago for the filling and cleaning of milk bottles. One of the reasons stated (Defts. Ex. 24, p. 77) for requiring standard milk bottles was the difficulty of washing other containers and subjecting them to bactericidal treatment. Washing must have reference to a glass milk bottle. The report of the Chief of the Bureau of Animal Industry to the Secretary of Agriculture dated September 1, 1938, shows clearly a distinction between the glass milk bottle and the single service paper container (Stipulation, Rec. 1027-49, copied in ptfs. main brief, p. 14). That report also shows that up to its date, September 1,

1938, paper containers were not being used to any extent in delivering milk to homes.

Plaintiff itself has distinguished between bottles and paper containers. In the original application to the Board of Health, plaintiff asked to present the facts regarding delivery of milk "in paper containers instead of bottles" (Defts. Ex. 22). The sales-manager of Ex-Cell-O Corporation which manufactures the Pure-Pak container, in a letter to the Board of Health dated August 2, 1938, stated that the Code and Ordinance of the United States Public Health Service were written a great many years ago and would not include the present, more sanitary receptacle—because it was then unknown (Defts. Ex. 23, p. 2, quoted in defts. brief pp. 12-13).

I find that the standard milk bottle specified in the ordinance is a glass bottle of the type, shape and proportions well-known to the trade and the community in Chicago as having been used for many years for the delivery of milk at retail. I also find that plaintiff's paper container is not a standard milk bottle within the meaning of the ordinance.

Validity of the ordinance:

I shall first dispose of two contentions that the ordinance is invalid for indefiniteness and for delegation of legislative power. I shall then deal with the contentions based upon alleged unreasonableness, deprivation of property without due process, and discriminatory enforcement.

2458 It is insisted that the ordinance is invalid because it does not define what constitutes a standard milk bottle, and that the ordinance thus contains an invalid delegation of legislative power. I find that the phrase "standard milk bottle" is self-definitive. The only thing that the ordinance leaves to be done is the ascertainment of a fact. As hereinabove suggested, what constitutes a standard, customary, or ordinary milk bottle is a fact which may even be judicially noticed. Such enactments are valid (e. g., *People* v. *Flaningam*, 347 Ill. 328, 333-5, and cases cited, "moral character"; *Proffitt* v. *County of Christian*, 370 Ill. 534. See also *U. S.* v. *Chemical Foundation, Inc.*, 272 U. S. 1, 12 "in the public interest"; *Buttfield* v. *Stranahan*, 192 U. S. 470, 491, 493, 496 (standard of purity, quality and fitness for consumption)).

It is also urged that the requirement for delivery in "standard milk bottles" must fall on account of the al-

leged invalidity of the proviso that that requirement shall not prohibit hotels, soda fountains, restaurants, and similar establishments from dispening milk or milk products from "sanitary dispensers" approved by the Board of Health. The whole section up to the proviso refers to the delivery of milk; the proviso refers to dispensing of milk from sanitary dispensers. These dispensers contained the milk in bulk, which was to be poured into a glass to be served to the patron (see Defts. Ex. 29, U. S. Public Health Service bulletin, p. 3, par. 2). The thought behind the proviso apparently was that in the case of restaurants and other such places where milk was consumed upon the premises, the milk might be considered as delivered upon its arrival at such place, and that the subsequent dispensing of the milk from the large container into glasses for service to the patrons in the place should not be considered as another delivery, but that the milk should be dispensed from sanitary milk dispensers. The theory was that if the dispenser were sanitary, the chances of contamination of the milk in such cases would be so much less than in the case of transfer from one container to another between pasteurizing plant or farm and the place of delivery, as to warrant the classification. I cannot say that this was not a reasonable basis for classification (cf. *Block.* v. *City of Chicago,* 239 Ill, 259, 261).

Neither can I say that there is a delegation of legislative power to the Board of Health in the matter of approving "sanitary dispensers" from which restaurants and other such places may dispense milk. The ordinance has prescribed definitely that such dispensers must be sanitary. That is a mere detail, a fact to be ascertained and maintained by the Board of Health. The Board is not in my opinion given legislative power by this proviso (see *People* v. *Flaningam,* 347 Ill. 328, 333-5, and other cases cited supra; and *Mayor* v. *Bloecher & Schaff,* 132 Atl, 160 (Court of App. of Md.) ("sanitary")).

Furthermore, since plaintiff herein does not come within the classification of restaurants and other such places, and has not as a member of such class applied for and been denied a permit for a sanitary dispenser, I find that the plaintiff is in no position to complain of the alleged invalidity of the proviso.

2459 I cannot say that the City Council would not have passed the section without the proviso. The proviso seems to me to be a mere guard against misinterpretation

of the section. It might well be that, even without the proviso, the serving of milk by a restaurant to its patrons would not be considered as a "delivery" of milk within the meaning of the ordinance.

Moreover, at all times since plaintiff applied for a permit in this case, the Board of Health had in effect a resolution adopted on November 12, 1935, concerning the sanitary dispensers which it would approve under this proviso (Defts. Ex. 26). That resolution provides "that all milk and milk products shall be sold, served or dispensed to the final consumer only in unopened original containers as received from the distributor; and no fractional portion or part of any original package or container shall be served or dispensed for consumption, except for manufacturing purposes." It seems to me that the question here raised is moot, in that no actual discrimination or prejudice to this plaintiff has yet been shown (e. g., *Jewel Tea Co.* v. *City of Troy*, 80 F. (2d) 366, 368-9 (CCA 7)).

I accordingly find that plaintiff's contentions based upon alleged invalidity of the proviso should be overruled.

This brings us to the important issue whether the ordinance is a legitimate exercise of the police power.

The controlling principles are well established. An act under the police power may not be arbitrary but must have a reasonable and manifest relation to the protection of the public health, safety or welfare. It must be an appropriate means and adapted to the object sought (*Jones* v. *Portland*, 245 U. S. 217, 256; *Pacific States Box & Basket Co.* v. *White*, 296 U. S. 176, 182; *Koy* v. *City of Chicago*, 263 Ill. 122, 130-1). In health measures (*Gundling* v. *City of Chicago*, 176 Ill. 340, 349), particularly those relating to milk, great latitude is given to the legislative body (*Koy* v. *City of Chicago*, 263 Ill. 122, 130-1; *Lieberman* v. *Van de Carr*, 199 U. S. 552, 561-2).

In the Koy case the court declared that regulation of the sale of milk is "an imperative duty" in order that the milk shall not only be free from disease but shall be pure and wholesome, and that the power to regulate extends not only to the health and keeping of the cows but also to the character of the receptacles in which milk is contained. The court also said that the object is the preservation of public health, and, as a means to that end, protection of the public against "dishonest vendors of milk."

It may be observed that the "means" which may be dealt with need not itself be a source of disease or peril

to health. The police measure is not necessarily narrowly confined to health, but may be enacted for the more general purpose of the public welfare.

Before an act will be held unconstitutional, its invalidity must palpably and unmistakably appear (*Schmidinger* v. *City of Chicago*, 226 U. S. 578, 588-9, affirming 245 Ill. 317). This rule of decision has also been somewhat differently phrased, that is to say, that the invalidity must appear beyond a reasonable doubt (*People* v. *Brady*, 272 Ill. 401, 407; *Joel* v. *Bennett*, 276 Ill. 537, 539), and that the invalidity must be "entirely free from doubt" (*United*
2460 *States, ex rel* v. *Quincy*, 4 Wall. 536, 549). The attack must fail if there is a conceivably rational ground on which the legislative body may have based its judgment (*Pacific States Box & Basket Co.* v. *White*, 296 U. S. 176, 182; *Sinking Fund Cases*, 99 U. S. 700, 718).

If the power to regulate exists, it is a matter of legislative judgment whether there shall be entire suppression rather than regulation (*Powell* v. *Pennsylvania*, 127 U. S. 678, 685; *Price* v. *Illinois*, 238 U. S. 446, 452). A valid general regulation or prohibition affecting a class of persons or things is not rendered invalid because a particular person or thing, belonging to the class, considered alone, is harmless. Thus in *Hacker* v. *Barnes*, 166 Wash. 558, 7 Pac. (2d) 607, the court held that the fact that the plaintiff's cattle were healthy did not constitute a reason for enjoining against the tuberculin test. In *City of Milwaukee* v. *Childs Co.*, 217 N. W. 703, the Wisconsin Supreme Court sustained an ordinance requiring the sale of milk in original containers even though defendant's dispensing method was as sanitary as that prescribed by the ordinance. See also *Hebe* v. *Shaw*, 248 U. S. 297, 303.

If there may be a reasonable difference of opinion, the legislative judgment controls (*Price* v. *Illinois, supra; Hebe* v. *Shaw, supra*). Thus enactments requiring vaccination or tuberculin tests have been sustained, notwithstanding evidence by objectors that such inoculations were in fact harmful and injurious (*Jacobson* v. *Massachusetts*, 197 U. S. 11, 30-1; *Adams* v. *Milwaukee*, 228 U. S. 572, 582, 583-4).

In *Laurel Hill Cemetery Co.* v. *San Francisco*, 216 U. S. 358, 365, the court in an opinion by Mr. Justice Holmes upheld an ordinance prohibiting burial within the city and county limits. The opinion went so far as to say:

"If every member of this bench clearly agreed that

burying grounds were centers of safety, and thought the Board of Supervisors and the Supreme Court of California wholly wrong, it would not dispose of the case. * * * Opinion still may be divided, and if, on the hypothesis that the danger is real, the ordinance would be valid, we should not overthrow it merely because of our adherence to the other belief. Similar arguments were pressed upon this court with regard to vaccination, but they did not prevail. On the contrary, evidence that vaccination was deleterious was held properly to have been excluded. *Jacobson* v. *Massachusetts*, 197 U. S. 11; see *Otis* v. *Parker*, 187 U. S. 606, 608, 609."

Legislation must be sustained, even if the rational ground therefor is established by less than a preponderance of the evidence, and even if the court from a preponderence of the evidence may reach an opposite judgment.

I shall now state my findings and comment upon the significance of the many steps in the manufacture, processing, and filling of paper containers. I shall also state my findings and comment upon the six particulars or characteristics which the City's brief sets forth as sufficient basis for legislative prohibition. The City's six divisions are:

Paper containers are absorbent;

Paraffin from the paper containers gets into the milk;

Paper containers are not sterile; they do not receive effective bactericidal treatment before they are filed with milk;

2461 Paraffin oxidizes at high temperatures, so that an odor is imparted to the containers;

Effective sanitary control of paper containers requires supervision and control of all processes in the manufacture of paper and its conversion into containers;

Paper containers are not transparent, and the cream does not rise to the top in them.

Manufacture, processing, and filling of paper containers:

The paper board is made in paper mills usually near wooded areas, in states other than Illinois. The paper for plaintiff's Pure-Pak container is made at the Cherry River mill in West Virginia. Three types of material are used for containers (Rec. 80): prime pulp, which is used in the manufacture of containers for milk and dairy products; a second class, not necessarily prime, which is high

grade, which may be used for containers of dried food, such as breakfast food; and a third class, called the waste paper class, consisting of material collected from unknown sources, used in the manufacture of boxes such as shoe boxes. The evidence is that plaintiff's paper board is made out of prime spruce pulp.

The logs for the prime spruce pulp are cut, washed, chipped, and placed in chemical digesters containing a cooking acid. The chips are digested under high steam pressure. This removes the encrusting materials. The cooking liquor is then washed out and the pulp is washed and then bleached to whiteness. The water is pressed out and the fibers are disintegrated in water. At Cherry River mill, chlorine, which has the effect of a bactericide (Rec. 100-1) is placed in the water (Rec. 64). Water is such an important part in the making of pulp and paper, that water should not contain bacteria. The pulp is further diluted in the machine with water which according to the record is sterile at Cherry River mill (Rec. 64).

The fibrous material then goes to a machine where the fibers are webbed or matted together and the water drawn from the fibers. The matted fibers then go over a series of steam heated cylinders or rolls, which at their surface are about 360° F. The temperature of the surface of the paper board in contact with the heated cylinder is between 175 and 200° F. The moisture of the paper board is thus reduced, but the paper board still contains some moisture.

As the paper board comes off of the machine, it is sprinkled with water (which at Cerry River is chlorinated) and ironed out to give it a gloss. It is then either rolled or cut into flat sheets, and wrapped in clean paper and sealed. At Cherry River, the paper board is then transported to a freight car which has been cleaned and lined with paper, and shipped to the converting plant of the Gardner-Richardson Co. at Middleton, Ohio, which cuts and trims the flat paper and prints on it as directed (Rec. 124).

The evidence is that at the Cherry River mill the employees engaged in the operations observe sanitary precautions as to clean hands and behavior; that there are numerous hand-washing facilities close to the operations; that the pulp and stock are mechanically handled, and the paper board is not allowed to come in contact with

2462 the floor; and that the paper board does not come into manual contact other than as may be necessary for adequate inspection.

In the case of Cherry River paper board, the Gardner-Richardson Company sends some of it to plaintiff's dairy ready for use in the Ex-Cell-O machine. That machine forms, paraffins, and fills the container (Rec. 87). As part of the filling process at plaintiff's dairy, the paper board receives a paraffin bath of fully refined paraffin at a temperature of from 172 to 176° F. The primary purpose of the paraffining is to provide moisture-proofing for the paper container (Rec. 85). In addition, the paraffining may act as an additional sanitary safeguard in that certain bacteria may be killed by the temperature of the melted paraffin (Rec. 85-6). However, paraffining will not kill all of the bacteria in the paper (Defts. Ex. 28, p. 2). It is also possible that the paraffing seals in any organisms that may be within the paper board (Rec. 86). On a hot day the paraffin on the board may become soft. Paraffin is shipped in slabs contained in burlap bags which are lined with muslin or some clean material. That paraffining does not effectively sterilize is confirmed by the recognition of the importance of sanitary conditions at the mill.

Two men are used on plaintiff's Ex-Cell-O machine for processing or filling in the paper board blanks and turning out the finished containers of milk. From the time the blanks are inserted in the machine until they come out sealed and filled with milk, the only manual handling is when the blanks are placed in the machine and after the containers have been filled, sealed and stapled and are ready for delivery (Rec. 90). The wire used in the containers is heated to a high temperature at the time it is inserted (Rec. 90). Ordinary sanitary precautions are taken as to the employees.

Facilities are provided for dismantling certain portions of the machine for purposes of cleaning (Rec. 91).

One of the methods of testing paper is the disintegration method which, briefly, is cutting the paper board into sections and placing them into sterile dishes. The paper is kept as sterile as possible for the test and the cutting instruments are sterile. The sections are then placed in sterilized water. Without going into further detail, by this method the bacterial content of the paper board can be determined (Rec. 84).

Another method is the rinse test, which is the test used

on glass bottles. Sterile water is introduced into a container for the purpose of rinsing organisms from the walls of the container, and taking out by bacteriological means the rinse water and counting the bacteria (Rec. 103).

Dr. Sanborn, as a result of 350 tests on Cherry River paper board received since January 1, 1939, at the laboratory in Geneva, New York, in the early part of 1939, testified that the shipments, collected under bacteriological control and shipped to the converters, were essentially sterile (Rec. 69). He testified that out of 240 tests made over a period of two years from June 1937, 88% showed less than 100 colonies per gram of disintegrated paper board. He stated that through research, 500 colonies
2463 per gram has been suggested as a safe maximum (Rec. 70). The regulation suggested in the recent amendment by the United States Public Health Service is 100 colonies per gram (Defts. Ex. 29, p. 6, par. 5b).

Dr. Sanborn testified that in his experiments he had not found any pathogenic (disease-producing) bacteria in paper board (Rec. 95), and that the paper board when it leaves the Cherry River mill does not contain enough moisture for pathogenic or other bacteria to live on (Rec. 97), that is, to develop and multiply, but does contain enough to enable them to continue to exist (Rec. 222-3). He testified that upon storage in a factory or warehouse at a temperature of 70° F., under sanitary conditions, the bacterial count in paper board would decrease (Rec. 99).

Much of this testimony was corroborated by other experts.

Dr. Prucha, one of plaintiff's witnesses, a bacteriologist on the staff of the University of Illinois, testified that the paper board was self-purifying, in that as the moisture in the paper board evaporated both as it went over the hot rollers and afterwards, bacteria, which must have moisture to exist and multiply, would tend to disappear (Rec. 1074). He testified that on account of this self-purification and the heating and drying to which the paper was subjected, it was immaterial whether the water at the mill was contaminated or not; that as far as he was concerned it would make no difference whether the water used had been taken from the Sanitary District channel in Chicago (Rec. 1074). Later, however, he testified that such water should not be used, as it might have a public health significance (Rec. 1193). And he also gave testi-

mony that bacteria including the non-spore forming disease producers, might remain in the paper for some time after it had been manufactured (Rec. 1194-99).

Dr. Tracy, one of plaintiff's witnesses, also on the staff of the University of Illinois, testified among other things that he considered the Pure-Pak container a "sanitary" container but not a "sterile" container (Rec. 701).

Dr. Woodman, Chief of the Health Department of Evanston, plaintiff's witness, tested 100 of plaintiff's containers. While he found that as much as 7% of them contained more than the permitted maximum of 1000 colonies of bacteria per quart (Rec. 1002), he also found 12 with 500 to 1,000; 20 with 100 to 500; 29 with less than 100; and 33 sterile. Other plaintiff's witnesses testified that their tests showed results within the permitted maximum; that the bacteria found in paper board were spore-forming aerobic organisms (living on organic material), were not pathogenic (Rec. 517), and presented no health problem (Rec. 520, 542).

Dr. Tracy testified that the bacteria pick-up on paper container machines used for filling was no greater than that found on glass bottle machinery (Rec. 735), and that the sterilization process on glass bottles, like the paraffining on paper containers, was not perfect (Rec. 739). However, he also testified that in experiments with 162 glass bottles which had been washed in apparatus operated essentially as in the City of Chicago he found no more than 600 colonies per bottle as compared with
2464 the permitted maximum of 1000 per bottle. The only basis of comparison between glass bottles and paper containers is after glass bottles have been washed. Upon completion of manufacture and before use, glass bottles are absolutely sterile, while paper board is only "essentially" sterile (Sanborn Rec. 72).

On the other hand, defendants, dealing with the subject of paper containers as a class, rely on evidence emphasizing possible sources of contamination and health hazards on account of variations from ideal procedure which might be found in mills generally (e. g., Rec. 1725 et seq.; Sanborn, 125). Thus there was testimony to the effect that the condition of the physical equipment of the mill might present sources of contamination; the vats might be of rough surface cement as opposed to tile, so as to give opportunity for the adhesion of a substantial amount of pulp which would furnish a breeding spot for bacteria;

the pipes might be of iron instead of copper, which might have a somewhat similar effect; the artificial blower or drying system might not be adequate, so that there might be contamination from the air, dependent upon the direction of the wind and upon atmospheric conditions; the water used on the driers might not be sterile; if a mill making containers for milk also made other types of containers in which inferior pulp was being used, there might be a residue of the inferior material which might mix with the pulp used for milk containers. It was also suggested that paper in transit might not be adequately protected from dirt or from moisture.

I find that the evidence is such that a legislative body might reasonably conclude that at one or more of the many steps and stages from the pulp to the sealed container, contamination might occur through carelessness, desire to save expense, inadequate facilities, or other reason.

Absorbency of paper containers:

The possibility of bacteria getting into the paper board has no significence unless such contamination can get into the milk in the finished container. I find that despite the paraffining, the finished paper containers are absorbent (Dr. Prucha, Defts. Ex. 28; Rec. 1234; Dr. Tracy, Rec. 728; U. S. Public Health Service statement, Ptfs. Ex. 61, p. 3, and that such bacteria as may be contained in the walls of the paper containers may thus get into and spread through the milk. Experiment 1, Defts. Ex. 28).

I find that there is evidence tending to show that the walls of the finished container may contain bacteria. Plaintiff's witness Dr. Sanborn testified on direct examination (Rec. 116-18) that the sanitary condition of the paper board blank determines the sanitary condition of the finished container; that paper with high bacterial counts will result in finished containers with high bacterial counts; that it is essential that the paper board have a low bacterial count. The paraffining is not an effective sterilizing agent.

Dr. Tracy, another of plaintiff's witnesses, testified that the condition of the mill is a significant factor in the condition of the finished paper container; that the sanitary condition of the water used in the paper mill bears
2465 a relation to the sanitary condition of the finished container; that dirty contaminated paper board must

never be used, because bacteriological tests on such board, even after the board has been well paraffined, are not satisfactory; that tests made of the water at two paper mills engaged in making paper for milk containers showed the presence of sewage or intestinal bacteria (Rec. 706-9). One of these was the unchlorinated water at the mill at which the paper for plaintiff's containers is manufactured, but the chlorinated water used by that mill was free of bacteria (Rec. 708).

With the best method of sterilization, it is possible to obtain a sterile glass bottle. On the other hand, I find that on the basis of the above evidence, a legislative body might reasonably be of the opinion that there is some danger that the walls of the finished paper container may contain bacteria, and that, by reason of the absorbency of the container walls, even when paraffined, the baeteria may get into the milk. The amount of absorbency is unimportant, the weight to be given for the determination of the legislative body (*City of Chicago v. Arbuckle Bros.*, 344 Ill. 597, 604-5).

Paraffin particles in the milk:

I find that there is a sloughing off of particles of paraffin into the milk (U. S. Public Health Service statement, Ptfs. Ex. 61, p. 3, quoted ante p. 3; Ptfs. witness Dr. Tracy, Rec. 727, 716-17; Defts. witness Martinek (1612-13). Dr. Black, a pediatrician, testified that he preferred to have milk for children not adulterated with paraffin; that in the handling of babies even the appearance of evil is to be avoided. On this subject plaintiff introduced evidence to show that paraffin was not harmful, and that the particles were so small as to be unimportant. The question here is not what the court may think regarding the harmfulness of such foreign substance in the milk. I find that the legislative body entrusted with the "imperative duty" (*Koy* v. *City of Chicago*, 263 Ill. 122, 130-1) of seeing to the purity of milk might, in view of this evidence, not unreasonably refuse to permit such foreign substances in milk, especially in milk for babies (by statute in Illinois the addition of "any" foreign substance to milk is forbidden: Ill. Stats. Ch. 38, par. 14).

Odors from paraffin or bacteria:

The city contends that paraffin oxidizes at high temperatures, with the result that an odor is imparted to the

paper containers and the milk therein. The City refers to the testimony of plaintiff's witness Keyser that oxidation of paraffin begins at a relatively low temperature and that the nature of the products of oxidation is acid (Deposition 27-8). Dr. Sanborn, another plaintiff's witness, when asked whether the container had been paraffined (Rec. 299-300), smelled it. He explained that paraffin may sometimes be heated too hot and that in such case certain products of decomposition may be detected. In that connection he mentioned that if the paraffin in the paraffin bath is not renewed and kept fresh, overheating is likely to occur at a lower temperature than with fresh paraffin; that if the paraffin in the bath is permitted to remain for two or three weeks without change and cleaning the tank, the paraffin may take on an off color and an odor (Rec. 318-20).

2466 The City makes the point that milk absorbs odors and if paraffin is allowed to get into such state the purity of the milk may be affected. It also makes the point that if paper board contains a high count of bacteria, such bacteria may not only be disease-producing but may give off very objectionable odors which may be absorbed by the milk (testimony of Dr. Rice, Rec. 527-32).

On the other hand, plaintiff contends that pure clean paraffin is harmless; that in fact plaintiff's container does not have such odors. It refers to the testimony of Howard R. Peterson (Rec. 1489-93) to the effect that paraffin oxidizes at 210° F., and even then only after twenty-four hours; that the fresh paraffin used has a sweet odor, free from any trace of rancidity; and that a paraffined milk container left in the sun will not permit of oxidation unless it be left there for many hundreds of hours. Plaintiff contends that the paraffin used in the Ex-Cell-O machine at plaintiff's plant is changed daily; that there is no public hazard if the sweet odor gets into the milk, and that there is no testimony that the oxidation of paraffin has any harmful effect.

Here again we have a conflict of views. I find that the City Council in prohibiting paper containers might conceivably have taken into consideration, along with other items, possible staleness of the paraffin, oxidation of the paraffin, and the possibility of rancid odors from oxidized paraffin being imparted to the milk. Since the duty of the City is not only to protect against disease-producing milk but also to insure pure unadulterated milk, I find that the City Coun-

cil may also have taken into consideration even the so-called sweet odors of pure paraffin and have decided that milk should not have a foreign odor, whether rancid or sweet and whether harmful or not. I also find that the City Council, in its effort to insure purity of milk, may likewise have been influenced to some extent by the possibility of objectionable odors from large counts of bacteria in the paper getting into the milk.

Effective Sanitary Control of Paper Containers:

As is apparent from the description of the various steps in the manufacture, transportation, processing and filling of paper containers, the sanitary condition of various paper mills may vary from time to time as either natural conditions change or the required precautions are not maintained. Economic considerations may influence relaxation in such precautions (Rec. 191-206).

Dr. Sanborn, plaintiff's witness, testified that, without knowledge and control of the sanitary conditions at the mill, rinse tests might be misleading (Rec. 232) and even disintegration tests alone might not always be relied upon (Rec. 188-9, 214), and that in the interest of public health, standards governing the production, processing and handling of paper board until filling of the container, should be adopted by public health authorities (Rec. 210-11).

In an address by Dr. Prucha in October, 1937, to milk sanitarians, he emphasized that they should inspect paper mills and check on the pulp and the water because some mills might not have proper control over contamination in water supply; that medical examination of the workers handling and packing the paper should be required; and that
2467 the plant where the paper is cut and printed should be inspected and visited (Ptfs. Ex. 62, pp. 1, 2).

Dr. Sanborn also testified (Rec. 224-5) that a consistently high standard of quality of paper depended largely upon constant voluntary adherence by the mills themselves to an adequate micro-biological control; that that would be the only means of control, unless laboratory tests by qualified bacteriologists within municipalities were made sufficiently comprehensive and complete so that the test of the finished product received in a municipality might be considered an index to the sanitary condition of manufacture; that the foregoing had occurred to him as of January, 1938, but that such a procedure depended upon the development of meth-

ods, and it might be some time before such a procedure could be worked out to be called an effective means (Rec. 225-6).

Plaintiff points to the testimony of various expert witnesses that the disintegration test is severe and satisfactory (Rec. 2502, 1265-6, 1292); that physical and chemical tests on paper containers at the dairy are adequate to indicate their sanitary condition. With reference to the evidence of Drs. Sanborn and Prucha concerning the advisability of inspection at mills and converting plants, plaintiff argues that they were investigators who were seeking detailed information on the subject; that one becoming an outstanding expert in this field would naturally start at the beginning, but that health officers in various municipalities which are using the single service containers have not felt it necessary to go to the mills or converting plants because they have adequate control after the containers arrive in the municipality, the same as they have over glass bottles, milk, or food products and food containers generally which are brought into their jurisdictions. (This latter point may be disposed of by the suggestion—also made in another connection in this report—that a legislative body may hit at one abuse which it has found, even though it has failed to strike at another (*United States* v. *Carolene Products Co.*, 304 U. S. 144, 151)).

Plaintiff further argues that the recent amendment to the model code of the United States Public Health Service (Sec. 10, Ptfs. Ex. 92; Defts. Ex. 29) does not require inspection and control at the mill, and that the resolution of the Board of Health of the City of Chicago of October 16, 1939, recommending an amendment to the Chicago ordinance, did not insert a condition requiring inspection at the mill. Plaintiff argues that the disintegration test furnishes and has been found to furnish adequate control without necessitating inspection at the mills, and that the sanitary qualities of its containers are as good as, if not better than, the washed glass bottle containers.

The City takes issue with the plaintiff as to what the United States Public Health Service now requires by quoting the following from the amendment to the model ordinance, Item 10p thereof:

"Single-service containers, etc., which have not been manufactured and handled in a sanitary manner may contaminate the milk.

"Satisfactory Compliance.—This Item shall be deemed to have been satisfied if—

• • • • •

2468 "(5) The manufacture, packing, transportation, and handling of single-service containers and container caps and covers are conducted in accordance with the following requirements. Inspections required herein may be made by the health officer or by any agency authorized by him."

The City also argues that it is possible effectively to sterilize a glass milk bottle at the dairy (Rec. 75, Dr. Sanborn), while a paper container requires constant inspection of manufacture and processing at remote places.

This discussion brings us back to the holdings that a legislative body in exercising the police power may decide to prohibit entirely or to regulate, and that the power is not to be denied simply because some innocent articles or transactions may be found within the proscribed class. It also emphasizes the evidence of plaintiff's own experts that conditions at the mill are important and significant, and that therefore adequate control requires not only inspection of the finished product, but also inspection and control of the preceding steps in the manufacture and converting, as a preventive. If this evidence conceivably furnishes a rational basis for legislative judgment that paper containers do possess hazards and deficiencies, it is immaterial that the court on all of the evidence may entertain a different judgment.

The record shows some paper containers, not plaintiff's, with high bacterial counts. In tests on 23 samples, 3 had less than 1000 colonies per container, 5 had 1000 per container, and 13 had above 1000 and up to 26,000, with very objectionable odors from the bacterial colonies (Rec. 527-32). There are a number of companies which manufacture paper containers, under varying conditions. Some of them, possibly many of them, may not observe the ideal precautions. Even plaintiff's container may not always be manufactured with the maximum of safeguards!

It is not a question whether a particular manufacturer or group of manufacturers may observe safeguards. Here we have a case where the legislative body may perhaps out of caution, but upon evidence in the record, have decided that the choice should be against the use of paper containers. And it may have decided that even if paper con-

tainers may serve the purpose of health regulations well, glass bottles serve it better, thus giving us the situation presented by the case of *Pacific States Box & Basket Co.* v. *White,* 296 U. S. 176, hereinafter mentioned; or it may have decided that the cost of inspection and control of paper containers was prohibitive (cf. *Block* v. *City of Chicago,* 239 Ill. 251, 261).

Non-transparency of paper containers:
Non-rising of cream to top:

As further reasons for the prohibition against paper containers, the City cites the fact that paper containers are not transparent and that the cream does not rise to the top in them. It argues that there is a sanitary advantage in a transparent milk container, and that in the glass milk bottle the cream line is visible and the consumer has an opportunity to judge as to the quality of the milk, and, it might be added, as to whether dirt or any other visible foreign body is in the milk; while in the paper container the butter fat content can be determined only by spe-
2469 cial tests (Rec. 688-9) and the milk is for some reason so affected that the cream does not rise to the top as in glass bottles.

The City cites the case of *Pacific States Box & Basket Co.* v. *White,* 296 U. S. 176, in which the Supreme Court upheld an Oregon regulation prescribing hallocks as standard containers for fruits and vegetables. The regulation prescribed not only the capacity, but also the dimensions and form of the containers. Plaintiff had for years sold its containers in Oregon, and because of the expense involved could not change to the new form. The opinion of the Supreme Court says that to fix both the dimension and form "may be" deemed necessary in order to assure observance of the prescribed capacity and to effect other purposes of the regulation; that it "may be" that in Oregon buyers at retail are "less likely" to be deceived as to the "condition and quality" of the berries if sold in the prescribed containers; that the character of the container "may be" an important factor in prescribing the condition of the berries; that a shallow container like the hallock "may conceivably" better preserve the fruits; that a container with perpendicular side "may conceivably" preserve them better than a metal-rim cup with outward sloping sides. The opinion mentions other possible advan-

tages, and says that there may be a reasonable difference of opinion as to the type best adapted to the "protection" of the public.

Plaintiff contends that Section 3094 of the Chicago ordinance here involved is not designed in any respect to prevent fraud in selling milk with too little butter fat, and is not an ordinance on weights and measures; that it is purely a health regulation; that if the consumer does not desire to buy milk because he cannot see the cream line, that is his privilege; that if the cream does not localize at the top and the consumer wants to pour off the cream, he may buy his milk in a glass container; that granting that privilege does not require or authorize depriving plaintiff of the right to sell milk in paper, or depriving other customers of the right to buy their milk in paper; that where the cream concentrates is meaningless from a public health standpoint, as long as it is present in the required amount; that there is nothing in the ordinance regarding transparency of milk containers or directions as to where the cream must localize.

The case of *Koy* v. *City of Chicago*, 263 Ill. 122, 130-1, holds that the "imperative duty" of the municipality includes not only regulation of the sale of milk but also the manner in which purity, wholesomeness and freedom from disease shall be secured "and made to appear"; that to that end the milk containers may be required to be "of prescribed character and capacity;" and that the object of all such restrictions is the preservation of the public health "and as a means to that end the protection of the general public against dishonest vendors of milk."

It may well be a legislative matter whether milk shall be sold in standard transparent glass milk bottles rather than in paper containers in order to protect the public health and to guarantee that milk sold contains the usual amount of cream. As said by the Supreme Court of the
2470 United States in *Pacific States Box & Basket Co.* v. *White*, 296 U. S. 176, *supra:* "Whether it was necessary in Oregon to provide a standard container for raspberries and strawberries, and, if so, whether that adopted should have been made mandatory, involved questions of fact and of policy, the determination of which rests in the legislative branch of the State government. * * * We may inquire only whether it is arbitrary or capricious."

Discriminatory enforcement:

Plaintiff on the basis of *Yick Wo* v. *Hopkins,* 118 U. S. 356, argues that the ordinance is invalid because of alleged discriminatory enforcement. The point is that despite the resolution of the Board of Health passed November 12, 1935, providing that milk shall be dispensed in hotel and restaurants only in original containers, no steps have been taken to enforce the resolution, and that therefore the Board has, at least by acquiescence, approved paper containers as sanitary dispensers within the proviso. Plaintiff relies upon evidence of several such purchases from drug stores in Chicago, and also upon an agreement (Stipulation, see Ptfs. brief p. 15) that ice cream, butter, lard, cheese, oysters, pickles, soft drinks, and liquid coffee are sold at retail daily in Chicago in paraffined cartons made of virgin spruce pulp.

I find that the evidence in this record does not furnish a basis for application of the *Yick Wo* case. There the evidence indicated that the ordinance concerning laundries was in fact directed against Chinese; that while the ordinance in terms applied to all laundries in wooden buildings, it was being given widespread enforcement only against Chinese. There is no such evidence here. The most that can be said is that the City has either not been able to watch every drug store and restaurant, or has not been as vigilant as possible in enforcing the Board's resolution concerning sales of milk in such places. That, however, does not in my opinion affect the validity of the ordinance.

The fact that foods other than milk are sold in containers to which objection may possibly be made does not invalidate the ordinance regarding milk. Aside from the answer that such other foods may be sufficiently different as to fall within a different class from milk, a still further answer is that a legislative body "may hit at an abuse which it has found, even though it has failed to strike at another" (*United States* v. *Carolene Products Co.,* 304 U. S. 150, 151; see also *Block* v. *City of Chicago,* 239 Ill. 251, 259-60).

Certain Contentions of Plaintiff Which Have Not Been Herein Specifically Mentioned:

Even if it may be considered that a number of other municipalities permit paper containers, it may also be considered that there are a much larger number of mu-

nicipalities throughout the country which have not permitted paper containers. The fact that police regulations of a certain kind are in effect in one part of the country does not prove that contrary police regulations in effect in other parts of the country are unreasonable.

The fact that disease or death has not been traced to paper containers presents merely a matter of emi-
2471 phasis and degree, proper for consideration in the formation of legislative judgment. The power to regulate the sale of milk includes the power not only to protect it against disease, but also against impurity. It also includes the power to provide that milk shall meet certain standards of quality. It includes power over the milk receptacles as a means of protecting not only against disease but also against impurity and lack of required quality. Courts in reviewing legislative judgment are concerned only with the question whether there exists evidence furnishing a rational basis for a conclusion that there is possibility or potentiality of a result against which the enactment is directed (*Standard Oil Co.* v. *City of Marysville*, 279 U. S. 582, 586).

Plaintiff refers to Section 15 of the 1939 Illinois Act concerning pasteurized milk and milk products (Ill. Rev. Stats. 1939, Ch. 56½, par. 129), and to the regulation of the State Department of Public Health thereunder, which recognize single service containers. However, Section 19 of that Act preserves the pre-existing home rule of municipalities on that subject. The existence of this statute may be very persuasive to the legislative bodies of municipalities, but where they may be reasonable ground for a conclusion either way, courts cannot substitute their judgment for that of the legislative body.

The same may be said of the action of the United States Public Health Service in the fall of 1939 in amending its model ordinance by adding single service containers (Ptfs. Ex. 92; Defts. Ex. 29; Rec. 1567). In this connection it is to be observed that as late as June, 1939, in the report adding paper containers to standard milk bottles in its model ordinance, the United States Public Health Service Sanitation Advisory Board included a criticism of paper containers (Ptfs. Ex. 61, p. 3; and see quotation *ante* p. 3).

The United States Public Health Service is merely advisory to municipalities. After that body in October, 1939, added single service containers, the Board of Health of

the City of Chicago in the same month passed a resolution recommending to the City Council that it amend the ordinance so as to permit the use of single service containers in addition to standard milk bottles. The City Council has not yet acted on that recommendation. The resolution of the Board will no doubt be given due weight by the City Council. The validity of the action of the City Council, wise or unwise, will depend only upon whether its decision has a reasonable basis. At the present time the ordinance of the City prohibits the use of single service containers. The resolution of the Board of Health does not establish that there is no basis for the prohibition; it merely is evidence that possibly a contrary policy should be adopted.

Plaintiff relies on *People* v. *Carolene Products Co.*, 345 Ill. 166, 168, to the effect that the legislature may not arbitrarily interfere with private business, and holding invalid a prohibition of carolene. In that case, however, the wholesomeness of carolene was admitted. In *United States* v. *Carolene Products Co.*, 304 U. S. 145, involving a federal prohibition of the same product, where wholesomeness was not admitted and the court considered the evidence (pp. 148-9), the prohibition was sustained. In the case at bar, not only does the city contend that
2472 paper containers are not sanitary, but evidence is relied upon to sustain the contention. The only question here is whether that evidence affords the necessary basis.

Pendency Before City Council, Summary and Recommendations:

The application is for an injunction and for a declaratory judgment. The issuance of an injunction is not a matter of absolute right but rests in the sound discretion of the court (*Petroleum Exploration, Inc.* v. *Public Service Commission*, 304 U. S. 209, 218). The issuance of a declaratory judgment also rests in the sound discretion of the court (*American Automobile Ins. Co.* v. *Freundt*, 103 F. (2d) 613, 619 (CCA 7). Since one of the objects necessarily implied in this proceeding is an amendment to the milk ordinance, it is noted that the issuance of a mandatory injunction or mandamus also rests in the sound discretion of the court (*Morrison, et al.* v. *Work, et al.*, 266 U. S. 481, 490).

Both parties agree that, if the phrase "standard milk

bottles'' does not include paper containers, the ordinance prohibits their use. However, in view of the fact that paper containers are of comparatively recent development, it would be more accurate to say that the ordinance does not yet permit them. Innovations, whether in health or other matters, have to stand the test of time and experience before they are adopted. We have a situation where the matter is actually before the City Council and the court is called upon to decide with reference to the same thing. According to the record, health measures first pass through the United States Public Health Service. If that body recommends their adoption, municipalities may or may not follow the lead. Here the United States Public Health Service has only recently taken its action and the Board of Health of the City of Chicago has promptly recommended to the City Council that it amend the ordinance. This matter, therefore, seems to be taking the regular course.

There is, in my opinion, strong basis for a finding that plaintiff has proved by a preponderance of the evidence that its containers are meritorious and should be permitted to be used. However, as already pointed out, in order that plaintiff may prevail, it must prove its case beyond a reasonable doubt; in other words, the question is whether there is enough evidence, even less than a preponderance, to establish a rational basis for the legislative decision. If there is such basis, it is immaterial that the court may have a different opinion as to the wisdom of such decision. And if there is such basis, the constitutional objections must be overruled.

The presumption is that the legislative judgment is valid. I find that there is evidence in the record, from plaintiff's own witnesses, independent of the corroborative testimony of Dr. Arnold, the City's witness, from which the City Council could reasonably have concluded that prohibition of paper containers was necessary and appropriate to protect the purity and wholesomeness of milk, or, to state the proposition another way, it is at least doubtful whether plaintiff has proved that there is not sufficient evidence tending to establish a reasonable basis for such conclusion.

2473 I find that the legislative body may reasonably have based its decision on evidence tending to prove the following:

There are steps in the manufacture, conversion and fil-

ling of paper containers in which bacteria may get into the walls of the containers.

Paper containers, even when paraffined, are to some extent absorbent and the milk may absorb such bacteria.

Sanitary conditions differ from one paper mill to another and even in the same mill from time to time.

The sanitary condition of the mill is a significant factor as to the condition of the finished container.

The sanitary condition of the paper board blank determines the sanitary condition of the finished container.

Particles of paraffin get into the milk and constitute a foreign substance which preferably should not be in milk, especially for babies.

Odors from paraffin, whether the paraffin is fresh or not, may get into the milk.

If the paper board contains a high amount of bacteria, they may exude objectionable odors which may get into the milk.

The control and precautions by paper manufacturers themselves may not be adequate.

In the case of glass bottles, the City has the cleaning process at hand locally and can exercise complete control; in the case of paper containers, inspection at remote places may be necessary, but impractical or too expensive.

Some paper containers have been shown to contain high bacterial counts.

Paper containers are not transparent as glass bottles, so that it is difficult to observe the quality of the milk or whether the milk contains dirt or other foreign body.

Cream does not rise to the top in paper containers, so that purchasers may not readily know whether they are getting milk of the required fat content.

The United States Public Health Service Sanitation Board in June 1939 criticized paper containers on account of their absorbency and the sloughing off of paraffin.

A reasonable basis for the legislative judgment being present, I conclude that the court must hold the ordinance valid and the prohibition of paper containers reasonable.

The findings and conclusions hereinbefore set forth may be considered as the declarations recommended in answer to the request for a declaratory judgment in this case. I shall not repeat every finding, but among them are included the following:

A paper container is not a standard milk bottle within the meaning of Section 3094 of the Revised Chicago Code.

The ordinance is not invalid as indefinite, as a delegation of legislative power, as unreasonable, as a deprivation of property without due process, or on account of discriminatory enforcement.

The acts of the defendants in denying plaintiff the use of its paper containers in the City of Chicago are in
2474 pursuance of the ordinance, and the ordinance, in view of the facts and the applicable rules of law, must be held a valid and reasonable exercise of the police power.

* * * * *

Upon the facts in this record, including the actual pendency of the whole matter before the City Council, I conclude and recommend that the court in the exercise of its sound judicial discretion, and with due regard for comity, public convenience, and the decisions regarding encroachment by the judicial department upon the domain of the legislative department, should not issue the injunction or render the declaratory judgment requested.

Dated at Chicago, Illinois, this 27th day of April, 1940.

Respectfully submitted,

Jacob I. Grossman,

Master in Chancery.

2814 And on, to-wit, the 7th day of May, A. D. 1940, came the Plaintiff by its attorneys and filed in the Clerk's office of said Court its certain Notice and Objections to Final and Modified Report of Master in Chancery Jacob I. Grossman, in words and figures following, to-wit: Filed May 7, 1940.

2815 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

NOTICE.

To:

Barnet Hodes,
Corporation Counsel,
#1300—139 N. Clark Street.
Walter V. Schaefer,
First Assistant Corporation Counsel,
#1300—139 N. Clark Street.
Charles P. Horan,
Assistant Corporation Counsel,
#1300—139 N. Clark Street.
Chicago, Illinois.

You are herewith served with a true copy of plaintiff's Objections to the Final and Modified Report of Master in Chancery Jacob I. Grossman; and said Objections attached are being filed by plaintiff pursuant to the Rules of Court for hearing and disposition by the trial court, before whom said cause is now pending.

Gariepy & Gariepy,
V. P. Frank & F. A. Gariepy,
Attorneys for Plaintiff.

Received a copy of this notice and the above described objections this 7th day of May, 1940.

Barnet Hodes,
Walter V. Schaefer,
Charles P. Horan.

Filed May 7, 1940. 2816

In the

DISTRICT COURT OF THE UNITED STATES.

• • (Caption—316) • •

OBJECTIONS TO MASTER'S REPORT.

Now comes the plaintiff, Fieldcrest Dairies (Inc.), and files and states its objections to the Amended and Modified Report of Jacob I. Grossman, Master in Chancery, dated April 15th, 1940, and filed April 27th, 1940, as follows:

(1) The Master erroneously stated (Page 5 of the Master's Report) that "the issues are whether plaintiff's paper container is a 'standard milk bottle' within the meaning of the Chicago Milk Ordinance, and, if not, whether the ordinance is invalid. Both parties take the position that if the paper container is not a standard milk bottle, the ordinance prohibits the use of paper containers."

Whereas, the Master should have stated the issues as follows: "Does the clause 'standard milk bottle' exclude the use of plaintiff's container? Does the failure of the ordinance to define 'standard milk bottle' render the ordinance invalid? Is the ordinance unreasonable? Has the ordinance been unreasonably administered by the Board of Health?

(2) The Master erroneously found (Page 6 of the Master's Report) that "glass milk bottles have constituted a distinct and definite class of bottles;" whereas
2817 the Master should have found and fails to find as established by the evidence that "glass milk bottles have constituted a distinct and definite class of glass bottles."

(3) The Master erroneously found (Page 6 of the Master's Report) that Dr. Tracy, plaintiff's witness, testified that if he were selling milk at retail in Chicago, the term "standard milk bottle" would mean to him a glass milk bottle of a certain size and shape (Record Pages 481-4. Whereas, the Master should have found and fails to find as established by the evidence (Record Page 681) that Dr. Tracy testified as follows: "There is a standard glass milk bottle but there is no standard milk bottle that I know of."

(4) The Master erroneously found (Page 6 of the Master's Report) that "a person of average intelligence would experience no difficulty in selecting a milk bottle from an array of other bottles." Whereas, the Master should have found and fails to find as established by the evidence, that milk bottles in use in the United States differ as to materials, shape, size and weight, and that, therefore, there is no such thing as a "standard milk bottle."

(5) The Master erroneously found (Page 6 of the Master's Report) that "to classify plaintiff's paper container as a 'bottle' would require considerable straining of the definitions of a bottle." Whereas, the Master should have found and fails to find as established by the evidence that a bottle is defined as a 'vessel designed to hold liquids constructed of various materials and in various forms' or 'a hollow mouthed vessel of glass, wood, 2818 leather or other material for holding and carrying liquid, and that plaintiff's paper container clearly comes within the definition of a bottle."

(6) The Master erroneously found (Page 7 of the Master's Report) that "the general understanding of standard milk bottle has always been that they are of the familiar shape and are made of glass." Whereas, the Master should have found and fails to find as established by the evidence "that there is no such bottle as a 'standard milk bottle,' and that milk bottles of various shapes, sizes and materials are used throughout the United States."

(7) The Master erroneously found (Page 8 of the Master's Report) that "the standard milk bottle specified in the ordinance is a glass bottle of the type, shape and proportion well known to the trade and community in Chicago as having been used for many years for the delivery of milk at retail and that plaintiff's container is not a standard milk bottle within the meaning of the ordinance." Whereas, the Master should have found and fails to find as established by the evidence that the ordinance does not define a 'standard milk bottle,' that the term 'standard milk bottle' is not self-definitive; that the term 'bottle' is now so loosely used that its limit of application is not well defined; and that plaintiff's paper container is a standard milk bottle within the meaning of the ordinance.

(8) The Master erroneously found (Page 9 of the Master's Report) that "the phrase 'standard milk bottle'

is self-definitive." Whereas, the Master should have found and fails to find that the term 'standard milk bottle' is not
defined by the ordinance, and the definition thereof
2819 must be supplied by the officer who executes the ordi-
nance, which is an unwarranted delegation of legislative authority to an executive officer, which renders this provision of the ordinance invalid."

(9) The Master erroneously found that (Page 12 of the Master's Report) "the proviso permitting hotels, soda fountains, restaurants and similar establishments to dispense milk from sanitary dispensers approved by the Board of Health does not give the Board of Health legislative power and is therefore valid." Whereas, the Master should have found and fails to find "that the proviso creates an unreasonable basis for classification, is a delegation of legislative authority without rules to guide the action of the Board of Health; and that inasmuch as the Court cannot say that the City Council would have passed the ordinance unaccompanied by this invalid proviso, the entire act is invalid."

(10) The Master erroneously found that (Page 15 of the Master's Report) "legislation must be sustained, even if the rational ground therefor is established by less than a preponderance of the evidence, and even if the Court from a preponderance of the evidence may reach an opposite judgment." Whereas, the Master should have found and fails to find that "some rational ground for the enactment of legislation should be established at least by a preponderance of the evidence, and that the Court cannot find that some rational ground exists for the passage of the ordinance unless such ground is proven by such a preponderance."

(11) The Master erroneously found that (Page 25 of the Master's Report) "the evidence is such that a legislative
body might reasonably conclude that at one or
2820 more of the many steps and stages from the pulp to the
sealed container, contamination might occur through carelessness, desire to save expense, inadequate facilities, or other reason." Whereas, the Master should have found and fails to find as established by the evidence that "the evidence is such that a legislative body could not reasonably conclude that at any of the steps and stages from the pulp to the sealed container, contamination might occur in any manner whatsoever, that the plaintiff has proved by a clear

preponderance of the evidence that no contamination can occur in the plaintiff's container from the many steps and stages in its manufacture from the pulp to the finished, filled and sealed container, and that plaintiff's container is sanitary, sterilized and not in violation of the provisions of the Ordinance or the rules and regulations of the Board of Health."

(12) The Master erroneously found (Page 26 of the Master's Report) that "the finished paper containers are absorbent; and that the walls of the finished container may contain bacteria; that paraffining is not an effective sterilizing agent." Whereas, the Master should have found and fails to find as established by the evidence that "the slight amount of absorption present in the paper container presents no health hazard."

(13) The Master erroneously found (Page 27 of the Master's Report) that "a legislative body might reasonably be of the opinion that there is some danger that the walls of the finished paper container may contain bacteria, and that, by reason of the absorbency of the container walls, even when paraffined, the bacteria may get into the milk."

Whereas, the Master should have found and fails to
2821 find as established by the uncontradicted evidence in the record that there are no injurious bacteria in the paper board and that the slight absorption existing in the paper container creates no health hazard. That no legislative body could reasonably be of the opinion that any health hazard exists by reason of absorption of milk by plaintiff's container.

(14) The Master erroneously found (Page 28 of the Master's Report) that "the Legislature might not unreasonably refuse to permit the use of paper containers because there is a sloughing off of particles of paraffin into the milk." Whereas, the Master should have found and fails to find as established by the uncontradicted evidence in the record that paraffin particles so sloughed off are so small as to be unimportant, that paraffin is not harmful and that any action of a legislative body in refusing to permit the use of a paper carton because of the possibility of the sloughing off of minute particles of paraffin is unreasonable.

(15) The Master erroneously found (Pages 30 and 31 of the Master's Report) that "the City Council in prohibiting paper containers might conceivably have taken into

consideration possible staleness of the paraffin, oxidation of the paraffin, the possibility of rancid odors from oxidized paraffin being imparted to the milk, and the possibility of objectionable odors in large counts of bacteria in the paper getting into the milk." Whereas, the Master should have but failed to find as established by the uncontradicted evidence in the record, that the paraffin used in plaintiff's cartons is clean, pure, harmless, contains no odors, is
2822 not heated to such a degree as to oxidize, is changed daily at plaintiff's plant and there is no health hazard in the use of paraffin in plaintiff's containers. That there is no evidence in the record of large counts of bacteria in plaintiff's container and that therefore no objectionable odors could get into the milk from bacteria. That the City Council would have been unreasonable in excluding plaintiff's container because of the possibility of staleness of paraffin, oxidation and rancid odors where no such possibility exists as to plaintiff's container.

(16) The Master erroneously found (Pages 35 and 36 of the Master's Report) that "the City Council may have reasonably determined that even if paper containers may serve the purpose of health regulations well, glass bottles serve it better, and that the cost of inspection and control of paper containers was prohibitive." Whereas, the Master should have found but failed to find as established by the evidence that the paper carton serves the purpose of health regulations better than the glass container, and that it is unnecessary to inspect and control at the mill, inasmuch as the tests on paper containers at the dairy are severe, satisfactory and adequate to determine their sanitary condition. That to exclude paper containers because of the unwarranted suggestion that control should be had at the mill would constitute an unreasonable assumption by the City Council.

(17) The Master erroneously finds (Page 36 of the Master's Report) that "inasmuch as the record indicates that some paper containers (not plaintiff's) have high bacterial counts, some companies might not observe the ideal precautions (taken by the manufacturers of plain-
2823 tiff's container) and that plaintiff's container might not always be manufactured with the maximum of safeguards." Whereas, the Master should have found but fails to find that conditions as to other containers should have no bearing on a finding that plaintiff's carton is sterile,

sanitary and presents no health hazards; and that it should be presumed that the condition of sanitation and sterility of plaintiff's container will continue to exist.

(18) The Master erroneously finds (Pages 37 to 40 of the Master's Report) that "it may well be a legislative matter whether milk shall be sold in transparent containers so that the public might be able to determine the quality of the milk sold, and whether any visible foreign body is in the milk; also that cream does not rise to the top in single service containers." Whereas, the Master fails to find and should have found that the ordinance does not specifically provide that milk shall be sold only in transparent containers nor does it provide that there should be a "cream line." That the ordinance by its other provisions adequately protects the public against fraud by adulteration and low butter-fat content.

(19) The Master erroneously found (Pages 41 and 42 of the Master's Report) that "the sale by drugstores of milk in paper containers, and also the sale of ice cream, butter, lard, cheese, oysters, pickles, soft drinks and liquid coffee at retail in paper containers in the City of Chicago is not discriminatory." Whereas, the Master should have found but fails to find that the ordinance has been discriminately enforced against paper cartons for the delivery of milk.

2824 (20) The Master erroneously found (Page 43 of the Master's Report) that "evidence of the permitted use of single service containers in a large number of communities without a single health hazard is immaterial and unworthy of consideration."

(21) The Master erroneously found (Page 44 of the Master's Report) that "the action of the State Legislature in permitting the use of single service containers is merely persuasive to the City Council." Whereas, the Master should have found but fails to find that the provision of the State Statute determines the public policy of the State and all its subordinate bodies, and that although the City under the "home rule provision" of the Statute can regulate the use of paper containers it cannot prohibit their use.

(22) The Master erroneously found (Page 45 of the Master's Report) that "at the present time the ordinance of the City prohibtis the use of single service containers." Whereas, the Master should have found but fails to find that there is no prohibition in the ordinance against the use of single service containers.

(23) The Master erroneously found (Page 46 of the Master's Report) that "not only does the City contend that paper containers are not sanitary, but evidence is relied upon to sustain the contention." Whereas, the Master should have found but fails to find that "the Board of Health, by recommending to the City Council the passage of an ordinance permitting the use of single service containers, has admitted that the paper containers are sanitary."

(24) The Master erroneously found (Page 48 of the Master's Report) that "the plaintiff must prove its
2825 case beyond a reasonable doubt.

(25) The Master erroneously found (Page 49 of the Master's Report) that "It is at least doubtful whether plaintiff has proved that there is not sufficient evidence tending to establish a reasonable basis for the conclusion of the City Council to prohibit the paper container." Whereas, the Master should have found but fails to find that the defendant should have proved but has failed to prove that there is sufficient evidence tending to establish a reasonable basis for the conclusion of the City Council to prohibit the paper container.

(26) The Master erroneously found (Pages 49 and 50 of the Master's Report) that "the legislative body might reasonably have based its decision to exclude single service containers on evidence tending to prove certain alleged facts (therein set forth)." Whereas, the Master should have found but fails to find that the reasons set forth are not existent in the case of plaintiff's containers, are mere guesses not based on any proof, are possibilities and not probabilities, and do not form any reasonable basis for the exclusion by the City Council of plaintiff's containers.

(27) The Master erroneously found that there is reasonable basis for the legislative judgment. Whereas, the Master should have found but fails to find that the City Council has failed to exercise its legislative judgment.

(28) Plaintiff objects to the following conclusions of the Master:

(a) That the ordinance is valid.

(b) That the prohibition of paper containers is reasonable.

2826 (c) That a paper container is not a standard milk bottle within the meaning of the ordinance.

(d) That the ordinance is not invalid, as indefinite, as

a delegation of legislative power, as unreasonable, as a deprivation of property without due process, and on account of discriminating enforcement.

(e) That the acts of the defendants in denying plaintiff the use of its paper containers in the City of Chicago are in pursuance of the ordinance, and the ordinance is a valid and reasonable exercise of the police power.

(f) That the Court should not issue the injunction or render the declaratory judgment requested.

(29) That the Master should have found but has failed to find as established by evidence, the following:

(a) That plaintiff's plant and pasteurization equipment, methods and conditions have been approved by the State Board of Health for sale of milk in its single service containers.

(b) That plaintiff has a permit from the Board of Health to sell its unpasteurized milk in the City of Chicago at wholesale.

(c) That plaintiff's plant has been inspected and approved by the Board of Health for sale of milk at wholesale.

(d) That the plaintiff (by and through the Dean
2827 Milk Company or J. C. Wieland-Dean Company or by itself) applied for a permit to use single service containers in the City of Chicago on January 13, 1936; November 5, 1936; December 4, 1937; January 23, 1939 and January 31, 1939; that the necessary sums were paid to the City of Chicago on January 23, 1939 for said permit; and that no action has been taken upon said application.

(e) That ice cream, butter, lard, cottage cheese, other cheese, pickles, soft drinks and liquid coffee are sold daily in the City of Chicago, at retail, in paraffined paper cartons made of virgin spruce pulp.

(f) That ice cream is sold daily in the City of Chicago in metal cans with a thin paraffined paper liner between the ice cream and the metal container; thin paraffined paper is permitted by the Board of Health of the City of Chicago to be placed across the top of metal milk cans underneath the metal cover of such cans; and paraffined drinking cups and paper straws are used daily in the City of Chicago, as well as paraffined paper liners for dishes in which ice cream is served.

(g) That prior to the commencement of this suit and ever since the plaintiff has sold liquid milk and milk prod-

ucts in its single service containers in sixty-eight (68) municipalities in the Counties of Cook, Lake and DuPage, Illinois.

2828 (h) That no new or unusual health hazard exists in the use of paper milk bottles.

(i) That there is no evidence in the record that any public health hazard has been or will be created by the use of paper milk bottles in 485 cities and villages in the United States where it is used daily.

(j) That bacteriological control over the single service container is adequate and sufficient and is at least equal to the control over the glass milk bottle.

(k) That the possibility of contamination from a diseased employee is greater in the case of a glass milk bottle than in paper bottles.

(l) That health hazards in a paper bottle dairy are far less than in a glass bottle dairy.

(m) That no health problem exists in the use of paper bottles which does not exist with glass bottles.

(n) That the bacteria count on glass bottles ready to be filled with milk has been generally found to be higher than on paper bottles.

(o) That paper milk bottles are superior to the glass milk bottle, since there is no chance to spread infectious disease organisms from household to household by a single service container.

(p) That the paper board in the single service container is so free from bacteria that the absorption of milk in the board presents no health problem.

(q) The rinse and disintegration test gives as
2829 adequate control over paper containers as over glass containers, to the end that the public health authorities can determine whether or not the cartons are sterile or contaminated without visiting the mills to examine the paper-making and converting process.

(r) That no strange or offensive odors exist as the result of the use of paper bottles, nor is there any strange taste in the milk distributed in paper bottles.

(s) That since there are no dangerous bacteria in the board to mix with bacteria commonly found in milk, there is no health hazard by reason of absorption of milk into the walls of the paper container.

(t) That paper containers are superior to glass bottles from a public health angle for the distribution of milk be-

cause all chance of spreading disease by re-use of the container is avoided in the use of the single service container.

(u) That the adhesive used in the container is sterile and without bacteria growth; and the taste, color, odor and health giving properties of milk is not harmed by contact with this adhesive.

(v) The paraffin bath used in single service containers is sterile and without bacteria, serves to seal in and destroy any bacteria present, and the chipping off of slivers of paraffin in milk presents no health problem.

(w) The possibility of oxidation of paraffin presents no health hazards.

(x) The paraffin used in plaintiff's container is free from all traces of rancidity or odors.

2830 (y) That sunlight, heat and cold have a more injurious effect upon glass bottles than on paper.

(z) That plaintiff's container is being used successfully in practical operation in 481 municipalities, including New York City, Philadelphia, Baltimore, Washington, D. C., Dayton, Ohio; Indianapolis, Detroit, Seattle, Los Angeles, San Francisco, Oakland, Phoenix; Flint, Michigan and Louisville, Kentucky, and that three to four hundred thousand of said containers are being sold daily.

(aa) That the United States Public Health Service has approved the use of single service containers and has recommended regulations for their control, and the Board of Health of the City of Chicago has recommended an amendment to the ordinance to include single service containers.

(bb) The ordinance does not expressly exclude the use of the single service container for the delivery of milk in quantities of less than one gallon.

(cc) The term "bottle" is loosely used and includes receptacles made of materials other than glass.

(dd) Milk bottles are of various sizes, shapes and colors and there is no such receptacle as a "standard milk bottle."

(ee) The ordinance does not define a "standard milk bottle."

(ff) The ordinance gives the Board of Health un-
2831 limited power to determine what is a "standard milk bottle", which is an unwarranted delegation of legislative power to an executive officer.

(gg) The proviso in the ordinance giving the Board of Health power to approve sanitary dispensers for milk in

hotels, soda fountains and restaurants is an unlawful delegation of legislative powers to an administrative body and invalidates the requirement of "standard milk bottles."

(hh) If the ordinance can be construed as prohibiting the use of plaintiff's single service container, it is unreasonable, unjust and oppressive and is therefore void.

(ii) The city ordinance is invalid because repugnant to the policy of the State as declared by the State Legislature which permits the use of paper containers and provides regulations for their use.

(jj) The exclusion of single service containers is unreasonable inasmuch as the Board of Health has recommended an amendment to the ordinance permitting their use.

(kk) The public health safety, comfort or welfare is not interfered with by the use of paper containers and the action of the City of Chicago in excluding its use deprives the plaintiff of property without due process of law in violation of the State and Federal Constitutions.

(ll) The "Public Health Reasons" in the regulations of the Board of Health of the City of Chicago explaining the purposes of Section 3094 of the Ordinance clearly indicate that the use of the single service container would eliminate all of the evils which this section seeks to prevent, and far better than by the use of glass containers.

2832 (mm) If the ordinance excludes the use of plaintiff's container it arbitrarily interferes with private business and prohibits a lawful occupation or imposes unreasonable and unnecessary restrictions upon them, and thus deprives plaintiff of property without due process of law in violation of the State and Federal Constitutions.

(nn) The ordinance denies to plaintiff the Equal Protection of the law in violation of the State and Federal Constitutions because the discrimination against paper bottles is unreasonable and has no substantial relation to the object of the ordinance.

(oo) The ordinance is contrary to the Federal and State Constitutions in that it has been discriminately enforced by the Board of Health in permitting the use of paper containers for the sale of milk in drug stores and restaurants while at the same time denying the right of the plaintiff to sell milk in its paper containers.

(30) The Master should have but fails to recommend a declaratory judgment in this cause to the effect that:

(a) Plaintiff's single service container is a standard milk bottle within the meaning of Section 3094 of the Revised Chicago Code.

(b) The ordinance is invalid as indefinite, as a delegation of legislative power, as unreasonable, as a deprivation of property without due process of law and on account of discriminatory enforcement.

(c) The ordinance is not a valid and reasonable exercise of the police power.

(31) The Master should have found but failed to
2833 find that the only reason given by the Board of Health for its failure to issue a permit to plaintiff for the use of its container in the delivery of milk was that it was awaiting the recommendation of the United States Public Health Service, whose model ordinance and advice furnish the lead for municipalities through the country; that the United States Public Health Service subsequently recommended the use of single service containers; that the Board of Health has recommended to the City Council an amendment to the ordinance so as to expressly provide for the use of such a container; that the failure of the City Council to pass such an amendment or the Board of Health to issue to plaintiff a permit as requested is unreasonable; and the plaintiff is entitled to the protection of the Courts, as against the unreasonable and discriminatory conduct of the defendants.

(32) The Master should have recommended the issuance of an injunction as prayed in the Complaint.

(33) The plaintiff objects to each and all of the recommendations and conclusions of the Master as stated in said Report.

Gariepy & Gariepy and
V. P. Frank,
Attorneys for the Plaintiff.

Filed May 14, 1940.

2834 And on, to wit, the 14th day of May, A. D. 1940 there was filed in the Clerk's office of said Court a certain Notice, in words and figures following, to wit:

2835 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

NOTICE.

To: Messrs. Gariepy and Gariepy,
1 N. La Salle Street, Chicago, Illinois.
Mr. Victor P. Frank,
33 N. La Salle Street, Chicago, Illinois.

You are hereby notified that on Tuesday, May 14, 1940, at the opening of court or as soon thereafter as counsel may be heard, we shall appear before the Honorable Charles E. Woodward, Judge of the United States District Court for the Northern District of Illinois, Eastern Division, and shall present a motion for the entry of a decree in accordance with the report of the Master in Chancery in this case, a copy of which motion is herewith served upon you.

Barnet Hodes,
Corporation Counsel,
Walter V. Schaefer,
Assistant Corporation Counsel,
Charles P. Horan,
Assistant Corporation Counsel,
Attorneys for Defendants.

Received a copy of the foregoing notice and of the motion therein referred to this 13th day of May, 1940.

Gariepy & Gariepy, (NWE)
Victor P. Frank,
Attorneys for Plaintiff.

2836 And on, to wit, the 14th day of May, A. D. 1940 came the Defendants by their attorneys and filed in the Clerk's office of said Court, their certain Motion in words and figures following, to wit:

2837 IN THE DISTRICT COURT OF THE UNITED STATES. Filed May 14, 1940.

* * (Caption—316) * *

MOTION.

The defendants, by their attorneys, respectfully represent to the court that on April 27, 1940 the report of Jacob J. Grossman, Master in Chancery in this case, making findings of fact and recommending that the court should not issue the injunction or render the declaratory judgment requested, was filed with the clerk of this court. Subsequently, on May 7, 1940, objections to the report of the Master in Chancery were filed by the plaintiff.

The defendants respectfully move for the entry of a decree in accordance with the report of the Master in Chancery.

City of Chicago, a municipal corporation,
Board of Health of the City of Chicago,
Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago,
Defendants.

By Barnet Hodes,
Corporation Counsel,
Walter V. Schaefer,
Assistant Corporation Counsel,
Charles P. Horan,
Assistant Corporation Counsel,
Attorneys for Defendants.

2838 And afterwards, to wit, on the 14th day of May, A. D. 1940, being one of the days of the regular May term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit:

Entered May 14, 1940.

2839 IN THE DISTRICT COURT OF THE UNITED STATES.
• • (Caption—316) • •

Tuesday, May 14, A. D. 1940.

Present: Hon. Charles E. Woodward, District Judge.

This day comes the defendant by its attorneys and enters its motion for entry of decree in accordance with the Master's Report which motion is entered and set for hearing October 16, A. D. 1940 at 10 A. M.

Filed Oct. 18, 1940.

2840 And on, to wit, the 18th day of October, A. D. 1940 there was filed in the Clerk's office of said Court a certain Memorandum by Judge Woodward, in words and figures following, to wit:

2841 IN THE DISTRICT COURT OF THE UNITED STATES.
• • (Caption—316) • •

MEMORANDUM.

October 18, 1940.

WOODWARD, *District Judge:*

The argument of the exceptions to the Master's report has taken a wide range. But this lawsuit, like many other lawsuits, resolves itself into very simple elements.

The great preponderance of the evidence is to the effect that the milk containers of the plaintiff—referred to as single service containers—contain no new or unusual health hazard. The evidence shows that they are safe and sanitary containers in which milk may be delivered. The uncontradicted evidence shows also that containers and receptacles less meritorious in structure and design from those of plaintiff's are in daily use in the City of Chicago for the sale of milk, chocolate milk, ice cream, and other liquids by drug stores, hotels, restaurants and soda fountains. Paper containers are also in common use for

2842 cheese, cottage cheese, butter, meat, fruit, foods, drinks and other edibles. The dispensing of such articles—including milk and milk products—in paper

containers is not, as shown by the evidence, deemed to create any hazard to the public health. Moreover, in the cities and villages where similar containers have been used over a substantial period, no epidemic, disease or any public health hazard has been created or suspected as being traced to the use of paper containers. In fact, so far as the evidence shows, no individual instance of serious disease or minor ailment has been traced to the use of paper containers. The results of practical experience are more persuasive than the opposing theories of experts.

The Court finds that the single service containers of the plaintiff, offered and admitted in evidence in this case, conform with the sanitary and health requirements of the city ordinances of the City of Chicago.

The Chicago city ordinance provides that milk and milk products, when sold in quantities of less than one gallon, shall be delivered in "standard milk bottles."

The Court has no difficulty in holding that plaintiff's single service container offered and admitted in evidence in this case is a "milk bottle" within the meaning of the ordinance. The definition of the word "bottle" given by practically all lexicographers, as well as the meaning
2843 of the word as used in common speech, shows that the word has no limited and restricted meaning. It is a word of broad and extensive connotation. Webster's New International Dictionary states, among other things, that the word "bottle is now so loosely used that its limit of application is not well-defined."

There is no requirement either in common speech, or by the dictionary definitions, that a bottle should be made of glass. Historically, in ancient times and in our times in certain parts of Southern Europe, as we are told by the Encyclopedia Brittanica, bottles made of skins were and are now used for containing and transporting liquids. While, in modern times, bottles have usually been made of glass, yet of the material out of which bottles have been made may be mentioned, besides glass and skins, hard stone, wood, ivory, bone, porcelain, glazed pottery and common earthenware. In fact, a bottle is not characterized by the material out of which it is made. Whether made of skins or glass or other hard substance a bottle must have certain characteristics. It must be an open mouthed vessel, it must have a neck with an aperture which may be closed with a plug, string or a stopper; and it must be

capable of containing liquids. The Master has described plaintiff's single service container as follows:

2844 "Plaintiff's container is a prismatic box about 6½ inches high and 4½ inches wide, with a gable top, made of paper and paraffined on the inside and outside. In the middle of one of the slanting surfaces of the gable top is a so-called pouring lip which is about an inch square and which is pulled out like an ear when milk is poured out of the container."

Plaintiff's single service container, as described by the Master, has all the characteristics of a "milk bottle", and, as indicated, the Court holds that it is a "milk bottle" within the meaning of the ordinance.

Having found that plaintiff's single service container is a "milk bottle" within the meaning of the ordinance, the next inquiry is, Is it a "standard milk bottle"?

The ordinance contains no definition of the word "standard." No reference is made in the ordinance to any statute, other ordinance or official regulation by which the meaning of the word may be ascertained.

In the absence of official prescription, resort must first be had to the meaning of the word as given by lexicographers. One meaning given to the word by all lexicographers is that which is

> "set up and established by authority as a rule for the measure of quantity, weight, extent, value or quality." (Webster's New International Dictionary.)

It also has the significance of

> "an accepted or established rule or model." (Webster's New International Dictionary.)

2845 Funk & Wagnall's New Standard Dictionary defines "standard" as

> "having the accuracy or authority of a standard; serving as a gauge, test, guide or model."

A "standard", therefore, may be said to be a type or model accepted as correct.

A standard, if not prescribed by statute or ordinance, would be a type, model or criterion recognized and approved by the class of persons engaged in the particular industry or business under consideration. The industry here under consideration is the milk industry—the delivery of milk for human consumption. If, in any given industry or business, the Court is called upon to declare whether a certain article is a standard article in that industry or

business, resort must be had to what is recognized in such industry or business as a correct and accepted type, model or criterion. The word "standard", as used in the ordinance, must be construed with reference to what articles are accepted in the milk industry as correct and proper containers.

It is perfectly proper, therefore, in construing the word "standard", as used in the ordinance, to consider what is recognized as a "standard milk bottle" in the milk industry, by boards of health, by state statutes and by the United States Public Health Service. In construing the word, the Court is not confined to any local construc-
2846 tion which may be given by the local board of health in construing its own ordinance, but may resort to the custom, type or model which is recognized generally in the industry. In other words, the country-wide standard is the one to be determined and applied. The ordinance is not static. The words are general and continuing in their operation. The ordinance must be construed in the light of new and changing conditions and current thought and practice. If, in the course of time, the advancement of science has produced a container which serves the same purpose as a glass container, and if the product delivered therein conforms to the requirements of sanitation prescribed by the health ordinances, then the ordinance must be given such construction as to permit the use of the later developed scientific container.

The record contains much evidence as to the use of the paper containers in New York City, Philadelphia, Boston, Detroit, Cleveland, San Francisco and 480 other cities and villages, including many cities and villages and municipalities in Cook, Lake and DuPage Counties, Illinois. In these cities and municipalities the use of the paper container for the delivery of milk is recognized by ordinance, custom, usage and common acceptance as being a standard
2847 article in which milk may be delivered. Besides, under the statutes of the State of Illinois (Ill. Rev. Stat.) 1939, Ch. 56½, par. 129) single service paper containers are recognized as proper and safe receptacles for the delivery of milk in the State of Illinois. The United States Public Health Service also has recommended a model ordinance for adoption for the City of Chicago which expressly permits the use of paper containers.

The Court holds that plaintiff's single service paper con-

tainers, as offered and admitted in evidence, are "standard milk bottles" within the meaning of the ordinance.

The ordinance thus construed has no constitutional infirmity.

Any other construction would render the ordinance void. Moreover, the Court is of opinion that under the recent statute of Illinois, heretofore referred to, the city is without power to prohibit the use of single service containers if such containers conform with the provisions of the statute.

2848 The Court will enter a declaratory judgment in accordance with the prayer of the complaint finding that plaintiff's single service containers are in conformity with the ordinance and enjoining the defendant from interfering with plaintiff in the sale and delivery of milk and milk products in single service containers.

A formal order on exceptions to the Master's report, findings of fact and conclusions of law, and a decree in conformity with this recommendation may be tendered after notice.

Filed Oct. 23, 1940.

2852 And afterwards, to wit, on the 23rd day of October, A. D. 1940, being one of the days of the regular October term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit:

2853 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

FINDINGS OF FACT.

The Court finds the facts herein specially as follows:

1. The plaintiff is a resident and citizen of Michigan and the defendants are residents and citizens of the State of Illinois.

2. The amount in controversy exclusive of interest and costs exceeds Three Thousand Dollars ($3,000.00).

3. An actual and bona fide controversy exists between the plaintiff on one hand and the defendants on the other as to the interpretation and validity of Section 3094 of the Revised Chicago Code of 1931, as amended on Janu-

ary 4, 1935 (now re-enacted as section 154-15, Municipal Code of Chicago, 1939, but hereinafter for convenience called "Section 3094".)

4. The defendants prior to the institution of this suit and at all times thereafter have contended that section 3094 prohibits the use of the "Pure-Pak" paper milk bottle referred to in the complaint and evidence herein for delivering milk in the city of Chicago in less than gallon
2854 quantities. They also contended and still contend that as so interpreted, said section 3094 is valid.

5. The plaintiff has contended and still contends that section 3094 does not prohibit said use of the Pure-Pak paper milk bottle and that if the section is construed so as to prohibit such use it is unreasonable, discriminatory, and void and in violation of section 2 of article 2 of the Constitution of the State of Illinois and of section 1 of the 14th Amendment to the Constitution of the United States.

6. The defendants have threatened to and unless enjoined by the Court will arrest and prosecute the plaintiff's officers, agents and employees if they deliver milk in the City of Chicago in less than gallon quantities in said Pure-Pak paper milk bottles. The actions and threats of the defendants irreparably damage the plaintiff. The plaintiff has no adequate remedy at law.

7. Section 3094 provides in part:

"The sale of dipped milk and milk products is hereby expressly prohibited. • • • Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the Board of Health. • • • "

8. The Pure-Pak paper milk bottle is a standard milk bottle.

9. The Pure-Pak paper milk bottle contains no new or unusual health hazard and they are safe and sanitary containers for the delivery of milk, cream and milk products.

10. The Pure-Pak paper milk bottle conforms with the sanitary and health requirements of the city ordinances of the City of Chicago.

2855 11. The Pure-Pak paper milk bottle conforms with the provisions of the state statute of Illinois (Illinois

Revised Statutes, 1939, chapter 56½, para. 129, item 10,) and the regulations of the Illinois Department of Health.

12. If section 3094 were to be construed to prohibit the use of plaintiff's Pure-Pak paper milk bottle for the delivery of milk in the City of Chicago in less than gallon quantities, said ordinance would be unreasonable and discriminatory and without any reasonable basis.

Enter this 23rd day of October, A. D. 1940.

Charles E. Woodward,
Judge.

Filed Oct. 23, 1940.

2856 And afterwards, to wit, on the 23rd day of October, A. D. 1940, being one of the days of the regular October term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit:

2857 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

CONCLUSIONS OF LAW.

The Court concludes as matters of Law:

1. This Court has jurisdiction of this suit on account of diversity of citizenship and presence of the jurisdictional amount.

2. This suit is properly brought and prosecuted under the Federal Declaratory Judgment statute (48 Stat. L. 955) and the Federal Rules of Civil Procedure relating thereto.

3. The Court has equitable jurisdiction to grant an injunction herein as prayed in the plaintiff's complaint.

4. Section 3094 of the Revised Chicago Code, 1931, as amended (reenacted August 30, 1939 as Section 154-15 of the Municipal Code of Chicago, 1939, but hereinafter for convenience referred to as "Section 3094") properly interpreted does not prohibit the delivery of milk or milk products in the plaintiff's "Pure-Pak" paper milk bottle
2858 in quantities of less than one gallon in the City of Chicago.

5. If Section 3094 were to be construed to prohibit the use of plaintiff's single-service paper containers, said con-

struction would render said provision and requirements of the ordinance void.

6. The plaintiff is entitled to a declaratory judgment that its said single-service container complies with the ordinances of the City of Chicago.

7. The plaintiff is entitled to an injunction restraining the defendants, their officers and agents from interfering with plaintiff in the sale and delivery of milk and milk products in said Pure-Pak paper milk bottles.

8. The plaintiff is equitably entitled to have the costs of this proceeding taxed against and paid by the defendants.

Enter this 23rd day of October, A. D. 1940.

Charles E. Woodward,
Judge.

2859 And afterwards, to wit, on the 23rd day of October, A. D. 1940, being one of the days of the regular October term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit: Entered Oct. 23, 1940.

2860 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

DECREE.

This cause coming on to be heard on the pleadings herein, the stipulations of the parties filed herein, the report of the Master in Chancery to whom this suit was referred and the evidence taken before him, and the written objections to the said master's report and the Court having heard the arguments of counsel on said objections and being fully advised in the premises,

Doth File herein this day its finding of facts and its conclusions of law duly authenticated by the signature of the judge of this Court, and

Doth Further Order, Adjudge and Decree:

1. That a declaratory judgment be and the same is hereby entered in this cause that the plaintiff's Pure-Pak single-service paper milk bottle is a "standard milk bottle" and that the same conforms with the city ordinances of the City

of Chicago and with the provisions of the State statute of Illinois (Illinois Revised Statutes (1939) Chapter 56½, Paragraph 129, Item 10) and the regulations of the Illinois Department of Health.

2861 2. That the defendants and each of them, and their officers, attorneys, agents, inspectors, employees, and all persons acting in privity with them or any of them, be and they hereby are restrained and enjoined perpetually (or until the further order of this Court) from in any manner or by any means preventing or in anywise interfering with the sale and delivery by the plaintiff, its officers, agents and employees, of milk and milk products in the City of Chicago in less than gallon quantities in the plaintiff's Pure-Pak paper milk bottle; provided that the sale and the delivery of said milk and milk products by the plaintiff in Pure-Pak single-service paper milk bottles conforms with the ordinances of the City of Chicago and the statutes of the State of Illinois. And the Clerk of this Court is hereby directed to issue an injunction under the seal of this Court to the defendants, restraining and enjoining them accordingly.

3. That the Master's fee for his services herein is hereby fixed at the sum of $3500.00, which sum is hereby taxed as costs herein.

4. It appearing that the services of a court reporter were necessary to take down and to transcribe the evidence heard before the Master and that the fair, reasonable and customary charge for said services is the sum of $1284.00, said sum is hereby taxed as costs herein.

5. That said costs as taxed aforesaid (less any amounts heretofore paid by said defendants on account of Master's fee and on account of the attendance of the court reporter before the Master and the original transcript of evi-

2862 dence) be paid by the defendants herein to Jacob I. Grossman, Master in Chancery, within thirty (30) days of this date. The Master shall from said payment, when received, refund to the plaintiff all sums heretofore advanced by the plaintiff on account of Master's fee and on account of the attendance of the court reporter before the Master and the original transcript of evidence.

6. That the plaintiff do have and recover of and from the defendants its costs by it expended herein, to be taxed by the Clerk of this Court and that execution on said judgment for costs issue against the individual defendants here-

in if requested by the plaintiff and that said judgment against the City of Chicago be paid by it in due course of law.

7. That the plaintiff's cash deposit with the Clerk of this Court for costs, less any sum expended therefrom, and less the Clerk's statutory fee be returned by the Clerk to the plaintiff.

Objections to the report of the Master in Chancery standing as exceptions are hereby sustained.

Enter, this 23rd day of October, A. D. 1940.

Charles E. Woodward,
Judge.

2849 And on, to-wit, the 23rd day of October, A. D. 1940, there was in the Clerk's office of said Court a certain Master's Certificate, in words and figures following, to-wit: Filed Oct. 23, 1940.

2850 IN THE DISTRICT COURT OF THE UNITED STATES.

• • (Caption—316) • •

MASTER'S CERTIFICATE.

Shortly after this reference was made the parties requested an early hearing, and hearings were held during the summer and early fall of 1939. The hearings extended during the period from May 31 to October 26, 1939. They were held at times convenient to out of town expert witnesses. The evidence was quite technical. Through suggestions of the Master, agreements were made by which costly experiments which would have taken a number of months, were eliminated. A number of briefs were filed, the last of which was submitted in March, 1940. It was necessary to have a stenographic transcript of the proceeding. The transcript of the testimony, exclusive of exhibits, totaled 2157 pages. The stenographic bill of the parties themselves was $1941.45, including carbons. The total taxable for attendance and original copy of transcript is $1284. This amount has been paid to the stenographers by the parties in proportion to the amount of testimony introduced by them, that is to say, $984.50 by plaintiff and $299.50 by defendant. On account of Master's fees plaintiff advanced $1800 and defendant $650. The Master spent more than 200 hours in exam-

ining pleadings, hearing the evidence, conferring with counsel, reading and considering the voluminous briefs and the evidence, preparing a report and considering
2851 objections, and revising the report. On a finding of the issues in its favor plaintiff is entitled to recover from defendant the amounts advanced by it.

Dated at Chicago, Illinois, this 21st day of October, 1940.

Respectfully submitted,

Jacob I. Grossman,

Jacob I. Grossman,
Master in Chancery.

Filed Oct. 23, 1940.

2863 And on, to-wit, the 23rd day of October, A. D. 1940, came the Defendants, by their attorneys and filed in the Clerk's office of said Court their certain Notice of Appeal in words and figures following, to-wit:

2864 IN THE DISTRICT COURT OF THE UNITED STATES.

For the Northern District of Illinois,

Eastern Division.

Fieldcrest Dairies, Inc., *Plaintiff*, *vs.* City of Chicago, a municipal corporation, Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago, *Defendants.*	No. 316 In Chancery.

NOTICE OF APPEAL TO CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT UNDER RULE 73 (b).

Notice is hereby given that City of Chicago, a municipal corporation, Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, defendants above named hereby appeal to the Circuit Court of Appeals for the Seventh Circuit from the final decree

entered in this action on the 23rd day of October, 1940, which decree embraced a declaratory judgment, appeal from which is hereby taken as well as from all other portions of said decree.

Barnet Hodes,
Corporation Counsel of the City of Chicago, Attorney for said Defendants.
511 City Hall,
Chicago, Illinois.

Alexander J. Resa,
J. Herzl Segal,
L. Louis Karton,
Assistant Corporation Counsel, of Counsel.

2877 And on, to-wit, the 15th day of November, A. D. 1940, came the Defendants-Appellants by their attorneys and filed in the Clerk's office of said Court their certain Statement of Points, in words and figures following, to-wit: Filed Nov. 15, 1940.

2878 In the District Court of the United States.

* * (Caption—316) * *

STATEMENT OF POINTS UPON WHICH APPELLANTS INTEND TO RELY ON APPEAL.

The appellants intend to rely on the following points on appeal to secure a reversal of the decree in this case:

1. The District Court erred in entering a declaratory judgment that the plaintiff's Pure-Pak single-service paper containers is a "standard milk bottle" and that the same conforms with the city ordinances and with the statutes of the State of Illinois and the regulations of the Illinois Department of Health.

2. The District Court erred in refusing to hold that the plaintiff's Pure-Pak single-service paper container is not a "standard milk bottle" within the meaning of the city ordinances of the City of Chicago.

3. The District Court erred in ordering an injunction to issue restraining the defendants from preventing or interfering with the sale and delivery by the plaintiff of milk and milk products in the plaintiff's Pure-Pak paper container.

2879 4. The District Court erred in not dismissing the complaint for want of equity.

5. The District Court erred in not overruling the objections to the report of the master in chancery standing as exceptions.

6. The District Court erred in sustaining the objections to the report of the master in chancery standing as exceptions.

7. The District Court erred in entering judgment against the defendants for plaintiff's costs by it expended herein.

8. The District Court erred in the following findings of fact:

"8. The Pure-Pak paper milk bottle is a standard milk bottle.

"9. The Pure-Pak paper milk bottle contains no new or unusual health hazard and they are safe and sanitary containers for the delivery of milk, cream and milk products.

"10. The Pure-Pak paper bottle conforms to the sanitary and health requirements of the city ordinances of the City of Chicago.

"11. The Pure-Pak paper milk bottle conforms with the provisions of the state statute of Illinois (Illinois Revised Statutes, 1939, chapter 56½, para. 129, item 10), and the regulations of the Illinois Department of Health.

"12. If section 3094 were to be construed to prohibit the use of plaintiff's Pure-Pak paper milk bottle for the delivery of milk in the City of Chicago in less than gallon quantities, said ordinance and without any reasonable basis."

9. The District Court erred in the following conclusions of law:

2880 "4. Section 3094 of the Revised Chicago Code, 1931, as amended (re-enacted August 30, 1939, as Section 154-15 of the Municipal Code of Chicago, 1939, but hereinafter for convenience referred to as 'Section 3094') properly interpreted does not prohibit the delivery of milk or milk products in the plaintiff's 'Pure-Pak' paper milk bottle in quantities of less than one gallon in the City of Chicago.

"5. If Section 3094 were to be construed to prohibit the use of plaintiff's single-service paper containers, said construction would render said provision and requirements of the ordinance void.

"6. The plaintiff is entitled to a declaratory judgment that its said single-service container complies with the ordinances of the City of Chicago.

"7. The plaintiff is entitled to an injunction restraining the defendants, their officers and agents from interfering with plaintiff in the sale and delivery of milk and milk products in said Pure-Pak paper milk bottles.

"8. The plaintiff is equitably entitled to have the costs of this proceeding taxed against and paid by the defendants."

Barnet Hodes,
Corporation Counsel of the City of Chicago; Attorney for said defendants-appellants.

Alexander J. Resa,
J. Herzl Segal,
L. Louis Karton,
Assistant Corporation Counsel,
Of Counsel.

Received a copy of the foregoing statement of points this 15th day of November, 1940.

Fred A. Gariepy, (W. E.)
Attorney for plaintiff-appellee.

2865 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

I, Hoyt King, Clerk of the United States District Court for the Northern District of Illinois, Eastern Division, keeper of the Seal and Records of said Court, do hereby certify that on the 24th day of October, A. D. 1940, I did cause to be mailed to Messrs. Gariepy and Gariepy, Attorneys for the Plaintiff, at One LaSalle Street, Chicago, Illinois, a copy of the Notice of Appeal filed by the defendant, The City of Chicago, a municipal corporation, on October 23, A. D. 1940, in accordance with Rule 73(b) of the Rules of Civil Procedure for the District Courts of the United States, in the above entitled cause.

In Testimony Whereof, I have hereunto subscribed my name and affixed the seal of the aforesaid Court, at Chicago, Illinois, this 7th day of January, A. D. 1941.

Hoyt King,
Clerk.

(Seal)

Filed Oct. 24, 1940.

2872 And on, to wit, the 24th day of October, A. D. 1940 came the Defendants-Appellants by their attorneys and filed in the Clerk's office of said Court their certain Designation of Contents of Short Record on Appeal in words and figures following, to wit:

2873 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

APPELLANTS' DESIGNATION OF CONTENTS OF SHORT RECORD ON APPEAL.

The Clerk of the District Court of the United States, Northern District of Illinois, Eastern Division, is hereby requested to prepare a short record for transmittal to the Circuit Court of Appeals for the Seventh Circuit, said short record to be made up so as to include the following documents:

1. Final decree entered in the above entitled cause on, to wit, October 23, 1940.
2. Notice of appeal filed on, to wit, October 23, 1940.
3. Motion of the defendants filed on, to wit, October 24, 1940 for supersedeas.
4. Notice together with proof of service thereof filed on, to wit. October 24, 1940 of aforesaid motion for supersedeas.
5. Order entered on, to wit, October 24, 1940 denying defendants' motion for supersedeas.
6. This designation of contents of short record on appeal together with proof of service thereof filed on, to wit, October 24, 1940.

Barnet Hodes,
Corporation Counsel of the City of Chicago,
Attorney for said Defendants.

Alexander J. Resa,
J. Herzl Segal,
L. Louis Karton,
Assistant Corporation Counsel.
Dated: October 24, 1940.

Received a copy of the foregoing appellants' designation of contents of short record on appeal this 24th day of October, 1940.

Fred A. Gariepy, (WE)
Attorney for Plaintiff.

2874 And on, to wit, the 8th day of November, A. D. 1940 came the Defendants-Appellants by their attorneys and filed in the Clerk's office of said Court their certain Bond on Appeal, in words and figures following, to wit: Filed Nov. 8, 1940.

2875 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

BOND ON APPEAL.

Know All Men by These Presents, That we, City of Chicago, a municipal corporation, The Board of Health of the City of Chicago, and Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, as principals, and United States Fidelity and Guaranty Company, a Maryland corporation, as surety, are held and firmly bound unto Fieldcrest Dairies, Inc., a corporation, in the full and just sum of Two Hundred and Fifty Dollars ($250.00) to be paid to the said Fieldcrest Dairies, Inc., a corporation, its attorneys, executors, administrators or assigns; to which payment, well and truly to be made, we bind ourselves and our successors in office, jointly and severally, firmly by these presents. Sealed with our seals and dated this 31st day of October in the year of our Lord One Thousand Nine Hundred and Forty.

Whereas, lately at a session of the District Court of the United States for the Northern District of Illinois, Eastern Division, in a suit pending in said court between Fieldcrest

2876 Dairies, Inc., a corporation, plaintiff, and City of Chicago, a municipal corporation, The Board of Health of the City of Chicago, and Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, defendants, a decree was rendered against the said City of Chicago, a Municipal corporation, The Board of Health of the City of Chicago, and Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, and the said City of Chicago, a municipal corporation, The Board of Health of the City of Chicago, and Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, having filed their

notice of appeal to the United States Circuit Court of Appeals for the Seventh Circuit in the clerk's office of the said District Court to reverse the decree of the aforesaid suit in the United States Circuit Court of Appeals for the Seventh Circuit to be holden at Chicago within forty days from the date hereof.

Now the condition of the above obligation is such, that if the said City of Chicago, a municipal corporation, The Board of Health of the City of Chicago, and Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, shall prosecute their said appeal to effect, and shall answer all costs that may be awarded against them if they fail to make their plea good, then the above obligation to be void; otherwise to remain in full force and virtue.

City of Chicago, a Municipal Corporation,
By Edward J. Kelly,
(City Seal) *Mayor of the City of Chicago.*

Attest:
Ludwig D. Schreiber,
Clerk of the City of Chicago.

Board of Health of the City of Chicago,
By Herman N. Bundesen,
President.

Attest:
Frances A. Dulak,
Secretary.

United States Fidelity and Guaranty Company, a Maryland corporation,
By Edmond J. Moroney,
(Corp. Seal) *Attorney-in-fact.*

Approved as to Form
Joseph F. Grossman,
First Assistant Corporation Counsel.

2868 And on, to wit, the 24th day of October, A. D. 1940 there was filed in the Clerk's office of said Court a certain Notice, in words and figures following, to wit:

2869 IN THE DISTRICT COURT OF THE UNITED STATES. Filed Oct. 24, 1940.
• • (Caption—316) • •

NOTICE.

To: Gariepy & Gariepy,
1 N. La Salle St.,
Chicago, Illinois.

Please Take Notice that on Thursday, October 24, 1940, at the opening of court in the forenoon or as soon thereafter as counsel may be heard, we shall appear before the Honorable Charles E. Woodward, Judge of the United States District Court and shall move on behalf of the defendants in the above entitled cause that the final decree (including the declaratory judgment therein embraced) heretofore entered on October 23, 1940, be stayed and that the injunction therein granted be suspended during the pendency of the appeal which has been perfected from said decree, and shall move that the supersedeas be effective without the filing of any bond by said defendants and that the court enter such order or orders as it may consider proper pursuant to the powers vested in the court by Rule 62 of the Rules of Civil Procedure for the District Courts of the United States, a copy of which motion is herewith served upon you; at which time and place you may appear if you so see fit.

Barnet Hodes,
Corporation Counsel of the City of Chicago,
Attorney for said Defendants,
511 City Hall, Chicago, Illinois.

Alexander J. Resa,
J. Herzl Segal,
L. Louis Karton,
Assistant Corporation Counsel.

Received a copy of the foregoing notice, together with motion therein referred to this 23rd day of October, A. D. 1940.

Gariepy & Gariepy,
Attorneys for Plaintiff.

Filed Oct. 24, 1940.

2866 And on, to wit, the 24th day of October, A. D. 1940 came the Defendants by their attorneys and filed in the Clerk's office of said Court their certain Motion, in words and figures following, to wit:

2867 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

MOTION.

Now come City of Chicago, a municipal corporation, Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, defendants in the above entitled cause and having heretofore filed their notice of appeal to the Circuit Court of Appeals for the Seventh Circuit from the decree heretofore entered on October 23, 1940, move the court that during the pendency of said appeal said decree (including the declaratory judgment therein embraced) be stayed and that the injunction therein granted be suspended, and further move that by reason of the fact that the defendants are a municipal corporation and officers thereof acting in their official capacities that said defendants be excused from filing any bond as a prerequisite of the supersedeas herein requested, and that the court enter such other and further orders relating to said supersedeas as it considers proper pursuant to the power vested in the court by Rule 62 of the Rules of Civil Procedure for the District Courts of the United States.

Barnet Hodes,
Corporation Counsel of the City of Chicago,
Attorney for said Defendants,
511 City Hall, Chicago, Illinois.

Alexander J. Resa,
J. Herzl Segal,
L. Louis Karton,
Assistant Corporation Counsel,
of Counsel.

2870 And afterwards, to wit, on the 24th day of October, A. D. 1940, being one of the days of the regular October term of said Court, in the record of proceedings thereof, in said entiled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit: Entered Oct. 24, 1940.

2871 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

ORDER.

This cause coming on to be heard on defendants' motion, after due notice; and the defendants now moving for a stay of the judgment and suspension of the injunction pursuant to the powers vested in this Court under Rule 62 of the Rules of Civil Procedure for the District Courts of the United States; and the Court being fully advised in the premises and having jurisdiction of the parties and the subject matter,

It Is Ordered that said motion of the defendants for a stay of the judgment and a suspension of the injunction be, and the same is hereby denied.

Enter:

Woodward,
Judge.

October 24, 1940.

2887 And on, to wit, the 15th day of November, A. D. 1940, came the Defendants-Appellants by their attorneys and filed in the Clerk's office of said Court their certain Designation of Portions of Record, Proceedings and Evidence to be contained in the Record on Appeal, in words and figures following, to wit:

2888 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

APPELLANTS' DESIGNATION OF THE PORTIONS OF THE RECORD, PROCEEDINGS AND EVIDENCE TO BE CONTAINED IN THE RECORD ON APPEAL.

The Clerk of the District Court of the United States, Northern District of Illinois, Eastern Division, is hereby requested to prepare the record for transmittal to the Circuit Court of Appeals for the Seventh Circuit, said record to be made up so as to include the following documents:

1. Complaint and exhibit attached thereto filed on, to-wit, February 2, 1939.
2. Plaintiff's Exhibit A filed on, to-wit, February 2, 1939.
3. Answer of defendants filed on, to-wit, February 27, 1939 with exhibits attached thereto.
4. Order entered on, to-wit, May 12, 1939 referring the cause to Master Grossman.
5. All depositions filed on, to-wit, May 24, 1939, or in lieu thereof a condensed statement in narrative form of the testimony contained in said depositions if the same be furnished by the parties hereto.
6. Notice filed on, to-wit, May 25, 1939.
7. Order approving stipulation entered on, to-wit, May 25, 1939.
7. Order approving stipulation entered on, to-wit, May 25, 1939.
8. Stipulation filed on, to-wit, June 29, 1939.

2889 9. Order approving stipulation entered on, to-wit, June 29, 1939.

10. Master's report filed on, to-wit, April 27, 1940.
11. Objections to depositions filed on, to-wit, April 27, 1940.
12. All of the plaintiff's and defendants' exhibits filed on, to-wit, April 27, 1940.
13. Transcript of testimony before the master in chancery consisting of three volumes filed on, to-wit, April 27, 1940, or in lieu thereof a condensed statement in narrative form of all or part of the testimony if the same be furnished by the parties hereto.
14. Notice and objections to final and modified report of the master in chancery filed on, to-wit, May 7, 1940.

15. Notice filed on, to-wit, May 14, 1940.
16. Motion of defendants filed on, to-wit, May 14, 1940.
17. Order entered on, to-wit, May 14, 1940.
18. Memorandum of Woodward, District Judge, filed on, to-wit, October 18, 1940.
19. Master's certificate filed on, to-wit, October 23, 1940.
20. Findings of fact filed on, to-wit, October 23, 1940.
21. Conclusions of law filed on, to-wit, October 23, 1940.
22. Final decree entered on, to-wit, October 23, 1940.
23. Notice of appeal filed on, to-wit, October 23, 1940.
24. Proof of service of notice of appeal.
25. Motion of defendants for supersedeas filed on, to-wit, October 24, 1940.
26. Notice filed on, to-wit, October 24, 1940.
27. Order entered on, to-wit, October 24, 1940 denying motion for supersedeas.

2890 28. Designation of contents of short record on appeal together with proof of service thereof filed on, to-wit, October 24, 1940.

29. Cost bond on appeal filed on, to-wit, November 8, 1940.
30. This designation of contents of the record on appeal.
31. Statement of points on which defendants intend to rely on the appeal to be filed herein.
32. Any documents hereafter filed, orders hereafter entered, or proceedings hereafter had in this case prior to the transmittal of the record to the Circuit Court of Appeals.

Dated: November 15, 1940.

Barnet Hodes,
Corporation Counsel of the City of Chicago, Attorney for said defendants-appellants.

Alexander J. Resa,
J. Herzl Segal,
L. Louis Karton,
Assistant Corporation Counsel,
Of Counsel.

Received a copy of the foregoing designation of contents of record on appeal this 15th day of November, 1940.

Fred A. Gariepy,
Attorney for plaintiff-appellee.

Entered Nov. 28, 1940.

2881 And afterwards, to wit, on the 28th day of November, A. D. 1940, being one of the days of the regular November term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit:

2882 IN THE DISTRICT COURT OF THE UNITED STATES.

• • (Caption—316) • •

Thursday, November 28, A. D. 1940.

Present: Hon. Charles E. Woodward, District Judge.

This cause coming on to be heard upon the motion of the defendant by its attorneys to extend the time to file the record on appeal to and including January 20, A. D. 1941 It Is Ordered that said motion be and the same is hereby allowed and the time to file the record on appeal in the Circuit Court of Appeals for the Seventh Circuit be and the same is hereby extended to and including January 20, A. D. 1941.

Filed Jan. 13, 1941.

2883 And on, to wit, the 13th day of January, A. D. 1941, there was filed in the Clerk's office of said Court a certain Stipulation in words and figures following, to wit:

2884 IN THE DISTRICT COURT OF THE UNITED STATES.

• • (Caption—316) • •

STIPULATION.

It is stipulated by and between the parties hereto by their attorneys that all original documentary exhibits received in evidence on behalf of the plaintiff and the defendants may be incorporated and used in the record in this cause on appeal to the Circuit Court of Appeals for the Seventh Circuit.

It is hereby stipulated by and between the parties hereto by their attorneys that the original depositions of Paul V. Keyser, Jr. and Herbert M. Packer, Elkan H. Yunker,

Florence Johnston and A. E. Carpenter, filed in this cause on May 24, 1939, may be used in the transcript of the record on appeal in lieu of copies thereof.

Barnet Hodes,
Corporation Counsel of the City of Chicago,
By James A. Velde,
Assistant Corporation Counsel, Attorney for Defendants.

Gariepy & Gariepy,
Fred A. Gariepy,
Attorneys for Plaintiff.

2885 And afterwards, to wit, on the 13th day of January, A. D. 1941, being one of the days of the regular December, 1940 term of said Court, in the record of proceedings thereof, in said entitled cause, before the Honorable Charles E. Woodward, District Judge, appears the following entry, to wit: Entered Jan. 13, 1941.

2886 IN THE DISTRICT COURT OF THE UNITED STATES.

* * (Caption—316) * *

ORDER.

This cause coming on to be heard upon the motion of the defendants and upon the stipulation of the parties hereto, it is ordered that all original documentary exhibits received in evidence on behalf of the plaintiff and the defendants may be incorporated and used in the record in this cause on appeal to the Circuit Court of Appeals for the Seventh Circuit; and that the original depositions of Paul V. Keyser, Jr. and Herbert M. Packer, Elkan H. Yunker, Florence Johnston and A. E. Carpenter, filed in this cause on May 24, 1939 may be used in the transcript of the record on appeal in lieu of copies thereof.

Enter:

Charles E. Woodward,
Judge.

Dated at Chicago this 13th day of January, A. D. 1941.

2891 Northern District of Illinois, Eastern Division. } ss.

I, Hoyt King, Clerk of the District Court of the United States for the Northern District of Illinois, do hereby certify the above and foregoing to be a true and complete transcript of the proceedings had of record made in accordance with Designation filed in this Court in the cause entitled Fieldcrest Dairies, Inc. *vs.* The City of Chicago, et al, Civil Action No. 316, (including original documentary exhibits of both parties and depositions filed May 24, 1939) as the same appear from the original records and files thereof now remaining in my custody and control.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of said Court at my office, in the City of Chicago, in said District, this 18th day of January, A. D. 1941.

Hoyt King,
Clerk.

(Seal)

Filed 31, 1941.

IN THE UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

Fieldcrest Dairies, Inc., a corporation,
Plaintiff-Appellee,
vs.
City of Chicago, a municipal corporation, et al.,
Defendants-Appellants.
} No. 7502.

STIPULATION.

It Is Hereby stipulated by and between the parties hereto, by their attorneys, that the Clerk of the Circuit Court of Appeals, in printing the record, may make the following omissions:

1. Plaintiff's Exhibit B attached to complaint filed in the District Court on February 2, 1939 and defendants' Exhibit 24 filed in the District Court on April 27, 1940 may be omitted and in the place of each exhibit an appropriate

notation may be inserted by the clerk to the effect that the exhibit omitted appears in the record as Exhibit A attached to the answer of the defendants filed in the District Court on February 27, 1939.

2. Two documents in the record filed in the District Court on April 27, 1940, one entitled "List of Plaintiff's Exhibits" and the other "List of Defendants' Exhibits" may be omitted.

3. Plaintiff's Exhibit 15 may be omitted with an appropriate notation inserted in its place that the exhibit appears in the record as Figures 2 and 3 of Plaintiff's Exhibit 12.

4. Plaintiff's Exhibit 15 marked "Withdrawn" may be omitted.

5. Plaintiff's Exhibit 20 may be omitted with an appropriate notation inserted in its place that the exhibit appears in the record as part of Plaintiff's Exhibit 4.

6. Except for the front cover sheet, all of Plaintiff's Exhibit 42 may be omitted.

7. Defendants' Exhibit 28 may be omitted with an appropriate notation inserted in its place that the exhibit appears in the record as the stipulation filed in the District Court on June 29, 1939.

1/30/31

Barnet Hodes,
Corporation Counsel of the City of Chicago, Attorney for defendants-appellants,
By James A. Velde,
Assistant Corporation Counsel.

Fred A. Gariepy,
Attorney for plaintiff-appellee.

Approved:

Sparks,
C. J.

Jan. 31, 1941.

Endorsed: In the United States Circuit Court of Appeals. • • • (Caption—7502) • • • Stipulation. Filed Jan. 31, 1941, Kenneth J. Carrick, Clerk.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

I, Kenneth J. Carrick, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages contain a true copy of Volume 3 of the printed record, printed under my supervision, and filed on the twenty-first day of February, 1941, which, together with Volumes 1 and 2, constitutes the record in the following entitled cause:

Cause No. 7502.

Fieldcrest Dairies (Inc.),
Plaintiff-Appellee,

vs.

City of Chicago (a Municipal Corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Defendants-Appellants,

as the same remains upon the files and records of the United States Circuit Court of Appeals for the Seventh Circuit.

In Testimony Whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this 5th day of September, A. D. 1941.

Kenneth J. Carrick,
(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*

At a regular term of the United States Circuit Court of Appeals for the Seventh Circuit held in the City of Chicago and begun on the first day of October in the year of our Lord one thousand nine hundred and forty of our Independence the one hundred and sixty-fifth.

Fieldcrest Dairies (Inc.),
Plaintiff-Appellee,
vs.
City of Chicago (a Municipal Corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Defendants-Appellants.

No. 7502

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

And, to-wit: On the fourth day of August, 1941, there was filed in the office of the Clerk of this Court, the Opinion of the Court, which said Opinion is in the words and figures following, to-wit:

IN THE UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

No. 7502. **October Term, 1940, April Session, 1941.**

FIELDCREST DAIRIES (Inc.), *Plaintiff-Appellee,*

vs.

CITY OF CHICAGO (a Municipal Corporation), BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago, *Defendants-Appellants.*

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

August 4, 1941.

Before SPARKS and MAJOR, *Circuit Judges*, and LINDLEY, *District Judge*.

MAJOR, *Circuit Judge*. This appeal is from a declaratory judgment decree in favor of plaintiff and awarding an injunction against defendants, entered October 23, 1940. The suit was commenced by a bill of complaint, filed February 2, 1939, which sought a judicial declaration that a milk ordinance of the City of Chicago, requiring milk to be delivered in "standard milk bottles" did not prohibit the sale of milk in plaintiff's paper containers, or that, if it does, the ordinance is invalid. An injunction was also sought restraining the defendants from interfering with the sale of milk in such containers. A hearing was had before a Master who recommended a denial of the relief sought. The court sustained objections to the Master's report and entered the decree in controversy.

Thus, the issues for decision are: (1) Does the ordinance forbid the delivery of milk in plaintiff's paper containers, and (2) if so, is the ordinance valid. Under the latter issue it is contended that any power which the City Council of the City of Chicago might have had to prohibit the sale of milk in such containers was withdrawn by an Act of the Illinois Legislature enacted in 1939, and, irrespective of this, that the ordinance was and is so unreasonable and arbitrary, both as a matter of law and fact, as to make it invalid.

The Master decided all issues in favor of the defendants, while the court concluded that plaintiff's container was a standard milk bottle within the meaning of the ordinance, and further concluded that any other construction of the ordinance would render it void.

Before discussing the merits of the issues presented, it is appropriate to state that the Master made a number of purported findings of fact which, in part at least, were not accepted by the court. The defendants contend that the court was obligated under Rule 53 (e) (2) of the Federal Rules of Civil Procedure to accept such findings "unless clearly erroneous." We think it is unnecessary to discuss to what extent, if any, this rule should be given application for the reasons: (1) The purported findings are in the nature of conclusions rather than findings of fact, and (2) for the more important reason that we have reached the conclusion that the cause should be disposed of on a legal rather than factual basis.

On January 4, 1935, there was enacted by the City Council of the City of Chicago, an ordinance regulating the production and distribution of milk in the city. Shortly thereafter there was promulgated by the Chicago Board of Health, regulations in conformity therewith. The provision of the ordinance now under attack is the third sentence of Section 3094:

> "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the board of health."

Prior to the institution of suit, plaintiff repeatedly sought from the Chicago Board of Health a permit to

retail milk in the city which was denied on the ground that the container in which plaintiff proposed to deliver its milk was not a "standard milk bottle" within the meaning of the ordinance. Thus, the first issue in dispute revolves solely around the interpretation of those words as used in the ordinance. It is the contention of the plaintiff, sustained by the lower court, that such words should be construed to include its paper container, while the defendants contend that they should be construed to include glass bottles only.

Any detailed description of plaintiff's business, or the process employed in the manufacture of plaintiff's container appears irrelevant to a construction of the ordinance. At this point, therefore, we make only a brief reference to the same. Plaintiff, a wholly owned subsidiary of the Dean Milk Company, a Corporation, is engaged in the distribution of milk and milk products. Its plant is located at Chemung, McHenry County, Illinois, where it has two machines leased from the Ex-Cell-O Corporation, used for packaging milk in paper containers bearing the trade name "Pure-Pak." Its facilities are such that it is unable to use glass bottles. Its container is manufactured from paper obtained from a mill in West Virginia. The paper is cut, trimmed and printed at a manufacturing plant located in Ohio. The product is shipped to plaintiff's plant and assembled into the type of containers now in controversy. Such containers are commonly and, we think, generally referred to by Governmental officials and those interested in the trade as "Single Service Containers." This follows from the fact that they are destroyed after a single use. Thus they are distinguished from a multi-container, such as a glass bottle, which may be used many times. The court adopted the Master's description of plaintiff's container:

> "Plaintiff's container is a prismatic box about 6½ inches high and 4½ inches wide, with a gable top, made of paper and paraffined on the inside and outside. In the middle of one of the slanting surfaces of the gable top is a so-called pouring lip which is about an inch square and which is pulled out like an ear when milk is to be poured out of the container."

The court, in construing the words "standard milk bottle" as including plaintiff's container, relied strongly upon two factors: (1) The situation existing in the trade at the

time of trial rather than at the time the ordinance was enacted, and (2) the definition of the word "bottle" as given by numerous Lexicographers. As to the first factor, the court said:

> "* * * The ordinance is not static. The words are general and continuing in their operation. The ordinance must be construed in the light of new and changing conditions and current thought and practice. If, in the course of time, the advancement of science has produced a container which serves the same purpose as a glass container, and if the product delivered therein conforms to the requirements of sanitation prescribed by the health ordinances, then the ordinance must be given such construction as to permit the use of the later developed scientific container."

We are of the view that this was an unsound basis upon which to predicate a construction of the ordinance. As was said in *Sup* v. *Cervenka,* 331 Ill. 459, 462:

> "* * * The courts have no legislative powers, and in the interpretation and construction of statutes their sole function is to determine, and within the constitutional limits of the legislative power to give effect to, the intention of the legislature. * * *"

and in *United States* v. *Goldenberg,* 168 U. S. 95, 102:

> "The primary and general rule of statutory construction is that the intent of the lawmaker is to be found in the language that he has used. He is presumed to know the meaning of words and rules of grammar. The courts have no function of legislation, and simply seek to ascertain the will of the legislator. * * * No mere omission, no mere failure to provide for contingencies, which it may seem wise to have specifically provided for, justify any judicial addition to the language of the statute. * * *"

In *United States* v. *First National Bank,* 234 U. S. 245, referring to facts subsequent to the enactment as bearing upon its construction, the court, on page 259, said:

> "* * * But these after facts can have little weight in determining the meaning of the legislation and certainly cannot overcome the meaning of plain words used in legislative enactments. * * *"

That the language of a legislative enactment is to be construed in accordance with its meaning at the time used

rather than by a meaning afterwards acquired, was held in *People* v. *Barnett*, 319 Ill. 403. On page 408, the court said:

> "• • • The true rule is that statutes are to be construed as they were intended to be understood when they were passed. Statutes are to be read in the light of attendant conditions and that state of the law existent at the time of their enactment. The words of a statute must be taken in the sense in which they were understood at the time the statute was enacted. • • •
>
> "The legislative intent that controls in the construction of the statute has reference to the legislature which passed the given act. • • • In interpreting a statute the question is what the words used therein meant to those using them. • • •"

A municipal ordinance is to be tested in the same manner as a state statute. *Pacific States Company* v. *White*, 296 U. S. 176, 186; *The People* v. *Chicago Rys. Co.*, 270 Ill. 87, 105. Thus the theory of construction advanced by the plaintiff, apparently followed by the District Court, to the effect that the words "standard milk bottle" should be interpreted in accordance with the meaning of those words at the time of trial rather than their meaning at the time the ordinance was enacted, is not tenable. The recognition of such a theory would, in effect, impose legislative functions upon the courts. It would mean that a legislative enactment might mean one thing today and something else tomorrow. Changed conditions, of course, may make advisable a repeal or modification of existing legislation, but if so, the appeal should be to the legislature and not the courts.

We therefore must consider the language employed by the City Council in the enactment of the ordinance in the light of conditions as they existed at that time. The record discloses that the glass milk bottle, similar to those in general use at that time, was invented in 1884, and that for many decades milk in less than gallon quantities had been delivered in the City of Chicago in such bottles. Their general appearance, size and shape have been substantially the same for a half century. On the other hand, the use of paper containers was scarcely known when the ordinance was enacted. True, their development began about 1928, but they first came into general use in the East-

ern states about 1938. Since that time their use has rapidly increased in all parts of the country, including the area adjacent to the City of Chicago.

Plaintiff argues that under such circumstances it could not have been the intent of the City Council in 1935, to exclude the use of paper containers. It is possible and, we think, likely that this is correct. The question, however, is what it intended to permit rather than what it intended to exclude. To us it is readily apparent that what the City Council did mean and intend by use of the words "standard milk bottle" was the glass bottle at that time in universal use. The language employed in the ordinance itself lends support to this view. We have quoted heretofore that portion of the ordinance directly involved in this controversy and it is pertinent to point out that in other portions of the ordinance the word "containers" is employed. For instance, in referring to quarantine premises, the ordinance states: "No milk bottle or other containers may be taken out of or away * * *." There was no occasion to use the words "other containers" if they were included in the words "milk bottles." The use of the words "milk bottle or other containers" is inconsistent with an intent that the latter was included in the former. The omission of the latter from the provision in controversy is therefore significant.

That a standard milk bottle has generally been recognized as not including a paper container or a single service container is well near conclusively demonstrated by the record. A number of witnesses who testified for the plaintiff recognized the distinction. In the same year the ordinance was passed, the United States Biennial Census of Manufacturers was taken, in which glass products were divided into three classifications, one of which was glass containers, and milk bottles were listed as one of the classes of glass containers. Under date of January 13, 1936, the Dean Milk Company (of which the plaintiff is the wholly-owned subsidiary) wrote the Board of Health that they would like to present the facts about "delivering milk to the City of Chicago in paper containers instead of bottles." Certainly there was no thought at that time that milk bottles included paper containers. The United States Public Health Service construed "standard milk bottle" to exclude paper containers. In June, 1939, its model ordinance was amended by adding "or in single service

containers" after "standard milk bottles." If the latter included the former, there was, of course, no occasion for the amendment. On August 2, 1938, the sales manager of the manufacturer of the machines used by the plaintiff for filling the containers, in a letter to the Board, referring to the ordinance, stated:

> "True, its fundamental principles were written a good many years ago, and would not include the present, more sanitary milk receptacle—because it was then unknown."

The court, after quoting numerous lexicographers as to the definition of the word "bottle," stated:

> "* * * While, in modern times, bottles have usually been made of glass, yet of the material out of which bottles have been made may be mentioned, besides glass and skins, hard stone, wood, ivory, bone, porcelain, glazed pottery and common earthenware. In fact, a bottle is not characterized by the material out of which it is made. * * *"

This reasoning, in our judgment, overlooks the fact that the language employed must be interpreted according to its usual and ordinary meaning. It could not be logically contended that the "standard milk bottle" referred to in the ordinance included a bottle made of skins, stone, wood, bone, or the numerous other articles out of which bottles, according to the lexicographers, have sometimes been made. We are not to search for that which possibly could have been included in the language employed, but must ascertain what was intended under the existing circumstances and conditions. Whatever meaning the word "bottle" might have had in ancient times, there can be no question in our mind but that in modern times it has generally been recognized as made of glass, and this has been the universal meaning as applied to a milk bottle.

The Master found the words "standard milk bottle" specified in the ordinance to be:

> "A glass bottle of the type, shape and proportions well known to the trade and the community in Chicago as having been used for many years for the delivery of milk at retail."

It is our judgment that the Master's conclusion in this respect was correct. It follows that the use of plaintiff's paper containers for the delivery of milk in the City of Chicago was prohibited by the ordinance.

We now consider the attack made upon the validity of the ordinance. While we have construed the ordinance in the light of the situation existing at the time of its passage, a different test is permitted and, in fact, required in determining its validity at the time of trial. As was said in *Chastleton Corp.* v. *Sinclair*, 264 U. S. 543, 547:

> "* * * A law depending upon the existence of an emergency or other certain state of facts to uphold it may cease to operate if the emergency ceases or the facts change even though valid when passed. *Perrin* v. *United States*, 232 U. S. 478, 486, 487. *Missouri* v. *Chicago, Burlington & Quincy R. R. Co.*, 241 U. S. 533, 539, 540. In *Newton* v. *Consolidated Gas Co.*, 258 U. S. 165, a statutory rate that had been sustained for earlier years in *Wilcox* v. *Consolidated Gas Co.*, 212 U. S. 19, was held confiscatory for 1918 and 1919."

This rule was recognized in *Perrin* v. *United States*, 232 U. S. 478, 487:

> "* * * The fact that the conditions may become so changed in the future as to render the prohibition inoperative affords no reason for condemning it now. * * *"

Moreover, where the public policy of a state has been declared in the interim between the judgment of the lower court and appeal here, we are bound to give recognition to such policy. *Vandenbark* v. *Owens-Illinois Glass Co.*, 311 U. S. 538, 543. Under this view we need not consider or decide the validity of the ordinance at the time of its enactment. The question for consideration is whether the ordinance now contravenes the public policy of the State of Illinois, and whether so or not, was the situation at the time of the institution of suit so altered as to make the prohibition contained in the ordinance unreasonable and void. On these questions, as well as others, the Master found in favor of the defendants. In deciding to the contrary, the court, as already pointed out, placed its chief reliance upon a construction of the ordinance as including plaintiff's paper container. The court also held:

> "Any other construction would render the ordinance void. Moreover, the Court is of opinion that under the recent statute of Illinois, heretofore referred to, the city is without power to prohibit the use of single service containers if such containers conform with the provisions of the statute."

The Illinois Legislature on July 24, 1939, during the pendency of this suit, enacted legislation (Illinois R. S. 1939, Ch. 56½, Foods, Pars. 115-134) which plaintiff contends established a policy for the state concerning the manufacture and distribution of pasteurized milk, including its distribution in single service containers. The Statute is lengthy and there seems no occasion to set it forth verbatim. It is sufficient to point out that it provides for the issuance of a Certificate of Approval to a pasteurization plant whose methods of operation comply with the numerous requirements of the Act. It also requires compliance "in accordance with minimum requirements adopted by the Director for interpretation and enforcement of this Act." (The Act defines "Director" as meaning the Director of the Department of Public Health.) Item 10 of Sec. 15 provides in part:

> "* * * Single service containers, caps, gaskets and similar articles shall be manufactured and transported in a sanitary manner."

Item 18 of the same section provides:

> "Bottling or packaging of milk and milk products shall be done at the place of pasteurization by approved mechanical equipment."

Pursuant to the power conferred by the Act, the Director of the Illinois Department of Public Health has promulgated "minimum requirements" for interpretation and enforcement of the Act. Among other things required are that single service containers shall be manufactured and handled in accordance with the requirements of the Department. The character of the buildings and rooms in which such containers are manufactured, packed, stored and handled, is prescribed. The average maximum bacterial count of the stock from which such containers are made is stated, and it is required that all operations in the fabrication plant, and during their transportation, shall be conducted so as to reduce to a minimum the possibility of contaminating such articles. It is required that all single service containers "shall be so treated as to be as impervious to milk and milk products as practicable."

There is no room for doubt but that the State, by this Act, as well as by the regulations promulgated pursuant thereto, has undertaken to regulate the pasteurization of milk, as well as its sale and distribution. It is equally

plain that the use of single service containers such as used by the plaintiff for the distribution of milk is permitted and approved upon compliance with the Act.

The authorities are uniform that any ordinance which conflicts with any statute or public policy adopted by the State Legislature is invalid. The rule is aptly stated in 2 McQuillin on Municipal Corporations, 572:

> "A Municipal corporation cannot, without special authority, prohibit what the policy of a general statute permits. Nor, on the other hand, can an ordinance permit that which the State's policy forbids. Consequently under a general grant of power, a municipal corporation cannot adopt ordinances 'which infringe the spirit, or are repugnant to the policy, of the state as declared in its legislation.' It thus follows that if the state has expressed through legislation a public policy with reference to a subject, a municipality cannot ordain in respect to that subject to an effect contrary to, or in qualification of the public policy so established. * * *"

Such rule has been recognized by the Illinois courts. *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311, 315; *City of Chicago* v. *Drogasawacz*, 256 Ill. 34, 37; *City of Marengo* v. *Rowland*, 263 Ill. 531, 534. In the Marengo case the court said:

> "* * * Municipal authorities, under general grant of power, cannot adopt ordinances which infringe the spirit of a State law or are repugnant to the general policy of the State. * * *"

It is also well established that the General Assembly may resume at any time the power previously delegated to a municipality. *Wilkie* v. *City of Chicago*, 188 Ill. 444, 452.

Thus, we are confronted with a situation wherein the State on the one hand has expressly recognized and made provision for the use of a single service container for the sale and distribution of milk upon compliance with the requirements of the Act, and regulations lawfully promulgated in conformity therewith, and on the other hand, with the provision of the City Ordinance which prohibits such use. Plaintiff has complied with the State requirements and has been issued a Certificate of Approval. By this token it has been authorized by the state to sell and distribute its product within the confines of Illinois in single

service containers. The City of Chicago, however, by the prohibition contained in its ordinance, denies to plaintiff this right conferred by the State.

The defendants, however, in defense of this apparent repugnancy, rely upon Sec. 19 of the 1939 Act, which reads:

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk, and pasteurized milk products, provided such regulation (does) not permit any person to violate any of the provisions of this act."

The title of the 1939 Act is:

> "An Act regulating the handling, processing, labeling, sale and distribution of pasteurized milk and pasteurized milk products."

Thus it will be noted that the language of the saving clause reserves to the city the right to regulate the same matters described in the title of the Act.

It is contended by the defendants that by this saving clause the city retains unimpaired the broad field of regulation which it theretofore had as recognized in *Koy* v. *City of Chicago*, 263 Ill. 122, and *City of Chicago* v. *Bowman Dairy Co.*, 234 Ill. 294. It is claimed that there is only one limitation in the saving clause and that is the proviso that the city shall "not permit any person to violate any of the provisions of this Act." Frankly, we are unable to conceive the purpose of these words. Certainly the city is without authority to permit the violation of the statute under discussion, or any other. The prohibition in this respect is meaningless. We think the words must be regarded as surplusage.

Furthermore, we are of the opinion that the purpose of the saving clause was not as broad as claimed by the defendants, notwithstanding that its language furnishes some support for such contention. The courts of Illinois have frequently recognized that power exercised by municipalities may be conferred or withdrawn by implication. *Village of Atwood* v. *Cincinnati, Indianapolis and W. R. Co.*, 316 Ill. 425; *Stowell* v. *Prentiss*, 323 Ill. 309, 319.

It therefore appears reasonable that the sole purpose of

the saving clause was to prevent a construction by implication, withdrawing the vast authority which the city had theretofore had over the milk industry. The ordinance of the City of Chicago and regulations of its Board of Health disclose scores of ways and means by which the industry is regulated, extending from the health of the cow producing the milk, to its delivery at the home of the consumer. The purpose of the saving clause, in our judgment, was to preserve in the city the unquestioned right to continue in a field which had been entered by the state, and in which, thereafter, each should have co-extensive power and authority. The defendants' contention, if sustained, would give the city a power broader than that provided by the Legislature for the state. It would make the state subservient to the city. It would impute to the Legislature the purpose of withdrawing the power theretofore exercised by the city and by the saving clause reconferring such power. We are unable to believe that such an incongruous result was intended. As was said in *Elsenau* v. *City of Chicago*, 334 Ill. 78, 81:

> "* * * A statute which grants powers to a municipal corporation is strictly construed, and any fair or reasonable doubt of the existence of an asserted power is resolved against the municipality which claims the right to exercise it. * * *"

Neither do we agree with the defendants' argument that the prohibition of plaintiff's single service container is a mere regulation. It is true that all regulations are prohibitory in nature to those who are unable to comply therewith, and that the prohibition of plaintiff's container may be considered a regulation as it pertains to the sale and distribution of milk. However that may be, the state, upon entering the field not only made provision for the sale and distribution of pasteurized milk but recognized, permitted and approved the use of such containers, and the ordinance is squarely in conflict therewith. That the city, by virtue of the saving clause, has the power to regulate paper containers, we have no doubt, but we are unable to accept the theory that it has authority to outlaw that which the state has legalized. We therefore are of the opinion that the portion of the ordinance prohibiting plaintiff from distributing milk in single service containers is contrary to the public policy of the state, and void.

Having thus concluded, we find no occasion to discuss at length or decide other controverted questions as to the validity of the ordinance. We are not unmindful of the broad power possessed by a legislative body, of the strong presumption of legality attaching to their acts, and that it is not within the province of a court to substitute its judgment for theirs as announced in the many cases cited and relied upon by the defendants. Such authorities, however, have no application in view of what we have decided. Moreover, it appears that the presumption in favor of validity could be little more than a shadow in the instant matter for the reason that the use of single service containers was in its incipient stage when the ordinance was enacted, and the legislative body could not, from the nature of things, have considered and weighed their advantages and disadvantages.

It is true the record discloses some evidence in support of defendants' contention that the use of such containers presents a hazard to health. Such evidence, however, carries little, if any, conviction when considered in connection with the fact that the United States Public Health Service, whose model ordinance has been widely adopted by cities throughout the United States, including the City of Chicago, amended its ordinance in 1939, so as to include the regulation of single service containers, and that such amendment was subsequently proposed to the Council of the City of Chicago by its Board of Health; that the Legislature of the State of Illinois and its Department of Health have approved the use of such containers since 1939, and that their use has been authorized and permitted by more than 200 cities and villages in the United States, including such cities as Washington, D. C., New York and Philadelphia, as well as practically all of the cities and villages near and adjacent to the City of Chicago.

From what we have decided, it follows plaintiff was entitled to a declaratory judgment that the ordinance prohibiting the use of its Pure-Pak Single Service Container was void. It also follows that plaintiff was entitled to an injunction restraining the defendants from prohibiting, but not from regulating, the use of such containers. The cause is therefore reversed and remanded for the sole purpose of modifying the decree so as to conform with the views herein expressed.

LINDLEY, *District Judge*, Dissenting in part:

I regret that I am unable to agree that the ordinance violates the public policy of Illinois as expressed in Illinois Revised Statutes, 1939, Chap. 56½, Section 115-134.

Under *Koy* v. *City of Chicago*, 263 Ill. 122 the authority of Illinois cities to regulate the sale and distribution of milk includes power to declare the means by which purity, wholesomeness and freedom from disease shall be secured; to require milk containers to be of prescribed character and to protect the public generally in the sale and distribution of milk. This municipal authority, thus defined by the Supreme Court, is still lodged in the city unless there is something in the statute mentioned which has expressly or impliedly withdrawn it.

The statute does not direct the use of paper milk bottles. It inferentially recognizes that single service containers of some character will be employed but there is no provision that cities must permit them to be used. The whole effect of the enactment is that if "single-service" containers are used they shall conform to certain minimum requirements to be prescribed by the Illinois Department of Public Health. To my mind this legislation did not take from the city power to determine whether paper milk bottles were reasonably possibly dangerous to health and therefore should not be used. Indeed, the legislature apparently recognized the retained police power of the city in the provision that nothing in the act "shall impair or abridge the power of any city * * * to regulate the handling * * * and sale of pasteurized milk." This language, it seems to me, was not meaningless or surplusage, as announced in the majority opinion, but rather in the nature of a declaratory clause maintaining the existing status, inserted by the legislature in an abundance of caution, to assure municipalities that their power to act in the premises was not taken away, provided their ordinances should not in any way conflict with the provisions of the statute.

To my mind this is far afield from those cases where the legislature has entered the field and by its action taken over all the police power upon any specific subject such as confronted the court in *Northern Trust Company*, 318 Ill. 402 and *City of Chicago* v. *Jensen*, 331 Ill. 129. In case of such complete occupation of the range there is no area left in which the city may legitimately operate. Here the state

has apparently left to the city the right to determine whether paper milk bottles shall or shall not be used. The language of *City of Chicago* v. *Union Ice Cream Co.*, 252 Ill. 311 is pertinent.

The Master found upon substantial evidence a number of facts bearing upon the undesirability of use of paper milk bottles, showing clearly that at least the question of desirability of their use is debatable. In such case the city council is entitled to exercise its own administrative and legislative judgment,—a judgment not to be superseded by verdict of a jury or decision of a court. *Carolene Products Co.* v. *Evaporated Milk Assn.*, 93 F. (2d) 202 (CCA7); *United States* v. *Carolene Products Co.*, 304 U. S. 144; *U. S.* v. *Morgan*, ... U. S. ....., 61 Sup. Ct. Rep. 999. See annotation 119 A. L. R. 243.

I think the ordinance should be sustained.

Endorsed: Filed August 4, 1941. Kenneth J. Carrick, Clerk.

And on the same day, to-wit: On the fourth day of August, 1941, the following further proceedings were had and entered of record to-wit:

Before:

Hon. William M. Sparks, Circuit Judge.
Hon. J. Earl Major, Circuit Judge.
Hon. Walter C. Lindley, District Judge.

Monday, August 4, 1941.

Court met pursuant to adjournment.

Fieldcrest Dairies (Inc.), *Plaintiff-Appellee,*

No. 7502 *vs.*

City of Chicago (a Municipal Corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago, *Defendants-Appellants.*

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

This cause came on to be heard on the transcript of the record from the District Court of the United States for the Northern District of Illinois, Eastern Division, and was argued by counsel.

On Consideration Whereof: It is ordered, adjudged and decreed by this Court that the Decree of the said District Court in this cause appealed from be, and the same is hereby, reversed, and that this cause be, and it is hereby remanded to the said District Court for the sole purpose of modifying the decree so as to conform with the views expressed in the opinion of this Court filed in this cause.

It is further ordered that the costs of this appeal be taxed against the Appellants.

And afterwards, to-wit: On the twenty-third day of August, 1941, the following further proceedings were had and entered of record, to-wit:

Saturday, August 23, 1941.

Court met pursuant to adjournment.

Before:

Hon. Otto Kerner, Circuit Judge.

Fieldcrest Dairies (Inc.), *Plaintiff-Appellee,*
No. 7502 *vs.*
City of Chicago, *et al.*, etc. *Defendants-Appellees.*

Appeal from the District Court of the United States for the Northern District of Illinois, Eastern Division.

On motion of counsel for appellants, It is ordered that the Mandate in this cause be, and it is hereby stayed pursuant to Rule 25 of this Court.

And afterwards, to-wit: On the twenty-sixth day of August, 1941, there was filed in the office of the Clerk of this Court, a Designation of Record, which said Designation is in the words and figures following, to-wit:

IN THE UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

Fieldcrest Dairies, Inc., a corporation, *Plaintiff-Appellee,*

vs.

City of Chicago, a municipal corporation, Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of the Board of Health of the City of Chicago, *Defendants-Appellants.* } No. 7502.

DESIGNATION OF PORTIONS OF RECORD.

The Clerk of the Circuit Court of Appeals for the Seventh Circuit is hereby requested to prepare a transcript of the record for transmittal to the Supreme Court of the United States, the transcript to be made up to include the following documents filed in the Circuit Court of Appeals:

1. Printed record of proceedings in the District Court of the United States for the Northern District of Illinois, Eastern Division, filed January 20, 1941.
2. Judgment of the Circuit Court of Appeals entered August 4, 1941.
3. Opinion my Major, Circuit Judge, and the dissenting opinion of Lindley, District Judge, both filed August 4, 1941.
4. Order for stay of mandate entered August 23, 1941.

Barnet Hodes,
Corporation Counsel of the City of Chicago, Attorney for Defendants-Appellants.

Endorsed: Filed August 26, 1941. Kenneth J. Carrick, Clerk.

UNITED STATES CIRCUIT COURT OF APPEALS

For the Seventh Circuit.

I, Kenneth J. Carrick, Clerk of the United States Circuit Court of Appeals for the Seventh Circuit, do hereby certify that the foregoing printed pages contain a true copy of proceedings had and papers filed, made in accordance with the Designation of Record, in

Cause No. 7502.

Fieldcrest Dairies (Inc.),
Plaintiff-Appellee,

vs.

City of Chicago (a Municipal Corporation), Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Defendants-Appellants,

as the same remains upon the files and records of the United States Circuit Court of Appeals for the Seventh Circuit.

In Testimony Whereof I hereunto subscribe my name and affix the seal of said United States Circuit Court of Appeals for the Seventh Circuit, at the City of Chicago, this 5th day of September, A. D. 1941.

Kenneth J. Carrick,
(Seal) *Clerk of the United States Circuit Court of Appeals for the Seventh Circuit.*

SUPREME COURT OF THE UNITED STATES

ORDER ALLOWING CERTIORARI—Filed November 24, 1941

The petition herein for a writ of certiorari to the United States Circuit Court of Appeals for the Seventh Circuit is granted.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

FILE COPY

PV 167

Office - Supreme Court, U. S.
FILED
OCT 20 1941
CHARLES ELMORE CROPLEY
CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT AND BRIEF IN SUPPORT OF PETITION.

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No.

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

PETITION FOR WRIT OF CERTIORARI.

To the Honorable, the Chief Justice and Associate Justices of the Supreme Court of the United States:

The petition of City of Chicago, a municipal corporation, Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago, respectfully shows:

Statement of the Matter Involved.

The particular matter involved is a provision in the milk ordinance of the City of Chicago requiring milk to be

delivered in "standard milk bottles."* The Circuit Court of Appeals for the Seventh Circuit has held that this provision of the ordinance is void (R. 1794). A writ of certiorari is sought to review the holding.

The respondent, Fielderest Dairies, Inc. (plaintiff in the trial court), a Michigan corporation incorporated in 1937 (R. 844, 1609-12), filed suit on February 2, 1939 against the petitioners (defendants) in the United States District Court for the Northern District of Illinois, Eastern Division. The plaintiff had sought a permit from the defendant Board of Health to sell milk in "Pure-Pak" paper containers in Chicago; the permit had been denied. The complaint (R. 2-15) alleged that the plaintiff's containers are "sterile, sanitary, and made of non-absorbent material" and are "standard milk bottles" within the terms of the Chicago ordinance requiring milk to be delivered in "standard milk bottles." The action of the defendants in refusing the permit to sell milk in Pure-Pak containers in Chicago was alleged to be discriminatory and unreasonable, to deprive the plaintiff of the equal protection of the laws, and to deprive the plaintiff of its property without due process of law, all in violation of the federal and Illinois constitutions. The complaint prayed (R. 14-15) for (1) a declaratory judgment finding either that the ordinance does not prohibit the plaintiff from selling milk products in Pure-Pak containers or that, if it does, the ordinance is unreasonable and unconstitutional; and for (2) an injunction restraining the defendants from interfering with the plaintiff in selling milk products in Pure-Pak containers in the city. The defendants filed an answer (R. 16-22) which denied that the plaintiff's containers are standard milk

* The provision is contained in the third sentence of section 3094 of the ordinance: "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; . . ." (R. 108).

bottles, are non-absorbent or sterile, or are sanitary containers for the distribution of milk, and denied that the plaintiff is entitled to the relief sought. The case was referred to a master in chancery for hearing (R. 123).

While the case was being tried before the master, a new issue arose as to the power of the city to regulate the character of containers used for the distribution of milk within the city. Municipalities in Illinois had been given broad regulatory powers over the production, processing, and distribution of milk by certain provisions of the Illinois Cities and Villages Act of 1872 (Public Laws of Illinois, 1871-72, pp. 231-233, secs. 1, 50, 53, 66, 78), which have not been repealed (Ill. Rev. Stat. 1939, ch. 24, secs. 65, 65.49, 65.52, 65.65, and 65.77). On July 1, 1939 the so-called Milk Plant Pasteurization Act went into effect (Laws of Illinois, 1939, pp. 660-666; Ill. Rev. Stat. 1939, ch. 56½, secs. 115-134). By this 1939 statute the Illinois General Assembly imposes many sanitary regulations on the milk industry, including a requirement that single-service (i.e. paper) milk containers be made and transported in a sanitary manner, and authorizes the Director of the Department of Public Health to promulgate minimum requirements for interpretation and enforcement of the act. Section 19 of the act contains a saving clause reading as follows:

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk, and pasteurized milk products, provided such regulation not permit any person to violate any of the provisions of this act." (Ill. Rev. Stat. 1939, ch. 56½, sec. 133.)

The plaintiff placed reliance on this statute in the presentation of the case to the master (see master's report, R. 1732).

The master heard many witnesses, who testified (R. 132-1396) about the manufacture of paper milk containers, their sanitary and insanitary characteristics, their use and regulation outside of Chicago, and the use of glass milk bottles in Chicago. Many exhibits were admitted in evidence (R. 1397-1708). The master filed a comprehensive report (R. 1710-36), recommending the denial of the relief sought. His conclusions were that paper milk containers are not "standard milk bottles" and are forbidden by the Chicago ordinance; that the saving clause in the Milk Plant Pasteurization Act of 1939 preserved the pre-existing home rule of municipalities on the subject of the regulation of milk; and that the ordinance is valid. On the question of the reasonableness of the ordinance the master discussed the evidence in detail (R. 1718-31), made specific findings of fact (R. 1734-35), and found from the testimony of the plaintiff's witnesses that the sanitary characteristics of paper milk containers are such that the Chicago City Council may reasonably have decided that their prohibition was necessary to protect the purity and wholesomeness of milk (R. 1734).

The trial court sustained objections (R. 1738-49) to the master's report and rendered a decree (R. 1759-61) in favor of the plaintiff. The decree contained a declaratory judgment that the plaintiff's paper milk containers are standard milk bottles. It also enjoined the defendants from interfering with the sale and delivery by the plaintiff of milk in the City of Chicago in the plaintiff's Pure-Pak containers. The opinion of the trial court (R. 1752-56), while devoted chiefly to the proposition that the plaintiff's paper milk containers are standard milk bottles and are not forbidden by the ordinance, also stated that under the 1939 statute (the Milk Plant Pasteurization Act) the City of Chicago was "without power to prohibit the use of

single-service containers if such containers conformed to the provisions of the statute." And the opinion stated that the ordinance would be void if it were construed to forbid the use of paper containers; by this the court meant, as indicated by its findings of fact (R. 1756-58), that the ordinance would be "unreasonable and discriminatory and without any reasonable basis" if it forbade the use of paper milk containers.

On appeal by the defendants to the Circuit Court of Appeals, the opinion (R. 1782-94) was written by Major, Circuit Judge, joined in by Sparks, Circuit Judge, with Lindley, District Judge, dissenting in part (R. 1795-96). The Circuit Court of Appeals held (opinion, R. 1784-88) that the trial court erred in holding that the ordinance permitted the use of paper milk containers and approved the master's conclusion that the plaintiff's paper containers are not "standard milk bottles." Judge Lindley did not dissent from this portion of the opinion.

The majority opinion stated (R. 1790-93) that the ordinance was void because contrary to the public policy of the State of Illinois as expressed in the Milk Plant Pasteurization Act of 1939. After pointing out that this statute permits the use of single-service containers and that the plaintiff had obtained a state certificate of approval of its pasteurization plant, the opinion said that the right thus conferred by the state was denied to it by the city ordinance. The opinion also said:

> ". . . the state, upon entering the field not only made provision for the sale and distribution of pasteurized milk but recognized, permitted and approved the use of such containers (single-service or paper milk containers), and the ordinance is squarely in conflict therewith." (R. 1793.)

As for the saving clause in the statute (sec. 19 quoted above), the majority opinion stated that it granted the city "the power to regulate paper containers . . . but we are unable to accept the theory that it has authority to outlaw that which the state has legalized." The majority opinion said also (R. 1794) that there was no occasion 'to discuss at length or decide" other questions about the validity of the ordinance. Nevertheless the opinion continued with a brief discussion of factors in the case that were said to rebut the presumption of the validity of the ordinance when attacked on constitutional grounds. The majority opinion concluded that the plaintiff was entitled (a) to a declaratory judgment that the ordinance was void in prohibiting the use of the plaintiff's paper containers and (b) to an injunction "restraining the defendants from prohibiting, but not from regulating, the use of such containers" (R. 1794).

In his dissenting opinion Judge Lindley (R. 1795-96) stated that the ordinance should be sustained, that he was unable to agree that the ordinance violated the public policy of the State of Illinois as expressed in the 1939 statute. He said that the language of the saving clause "was not meaningless or surplusage as announced in the majority opinion, but rather in the nature of a declaratory clause maintaining the existing status . . . to assure municipalities that their power to act in the premises was not taken away . . . ".

Pursuant to the majority opinion a judgment was entered by the Circuit Court of Appeals, reversing the cause and remanding it for the sole purpose of modifying the decree to conform with the views expressed in the opinion (R. 1797). This is the judgment sought to be reviewed. It requires modifications in the decree of the trial court

as follows; while the decree contained a declaratory judgment that the plaintiff's paper containers are standard milk bottles and are permitted by the Chicago ordinance, the modified declaration will be that the ordinance is invalid in prohibiting the use of the plaintiff's containers; and while the decree enjoined the defendants "from in any manner or by any means preventing or in anywise interfering" with the sale and delivery of milk by the plaintiff in its paper milk containers, the injunction ordered by the Circuit Court of Appeals will restrain the defendants from prohibiting, but not from regulating, the use of the plaintiff's containers.

Basis of the Jurisdiction of This Court.

(a) The jurisdiction of this court is invoked under section 240 of the Judicial Code as amended by the act of February 3, 1925 [28 U. S. C. 347, par. (a)]. The pertinent language of the section is as follows:

> "(a) In any case . . . in a circuit court of appeals, . . . it shall be competent for the Supreme Court of the United States . . . to require by certiorari, *either before or after a judgment or decree by such lower court,* that the cause be certified to the Supreme Court for determination by it, and with like effect, as if the cause had been brought there by unrestricted appeal." (Italics added.)

In a sense the judgment of the Circuit Court of Appeals sought to be reviewed may not be a final judgment, since it reversed and remanded the cause for the purpose of modifying the decree entered by the trial court to conform with the views expressed in the opinion. But the Circuit Court of Appeals made a final determination that the ordinance involved is invalid and the formal modification of the decree is all that remains to be done in the trial court.

This alone is enough to permit the Supreme Court to review the cause by writ of certiorari, particularly since the judgment need not be final in the technical sense. This is evident from the language of the section quoted above. And see *Fuller* v. *Otis Elevator Company*, 245 U. S. 489 (1917), where the fact that the judgment was not final was held to be no objection to the granting of the writ.

(b) The judgment of the Circuit Court of Appeals sought to be reviewed was entered on August 4, 1941 (R. 1797).

Questions Presented.

There are two questions presented. Both require the application of federal and state law.

(1) The Circuit Court of Appeals has held that the City of Chicago did not have power to enact the ordinance forbidding the use of paper milk containers. This holding involves the construction of grants of regulatory powers made by the Illinois state legislature to the City of Chicago. The state law aspect of this question is: did the Illinois Milk Pasteurization Act of 1939 withdraw from the City of Chicago the power to enact the ordinance granted to the city by the Illinois Cities and Villages Act of 1872? In holding the ordinance invalid the Circuit Court of Appeals was exercising the jurisdiction of a federal court to grant writs of injunction and to enter declaratory judgments in diversity of citizenship cases. There is thus a federal question presented: should the Circuit Court of Appeals have exercised this jurisdiction to deny the city the power to enact the ordinance and thus to interfere with a local, state matter?

(2) The complaint alleged (R. 11) that the ordinance deprived the plaintiff of the equal protection of the laws

and of its property without due process of law in violation of both the federal constitution (fourteenth amendment) and the Illinois constitution (sections 2 and 13 of article 2). The trial court found that the ordinance would be unreasonable and discriminatory if it forbade the use of paper milk containers. It was not necessary for the Circuit Court of Appeals to decide this constitutional question, since it held that the city had been deprived of the power to pass the ordinance. Nevertheless the majority opinion of the Circuit Court of Appeals sets forth a number of grounds for holding the ordinance unreasonable, indicating that the majority considered the ordinance unconstitutional (R. 1794). There is here a question of the propriety of a judicial pronouncement that a city regulation is invalid under the fourteenth amendment when there is evidence in the record showing that the ordinance was not unreasonable. If this court should decide that the city has power to forbid the use of paper milk containers, the decision of the constitutional question cannot be avoided. On this issue the specific question, under both the federal and Illinois constitutions, is whether or not the plaintiff has proved that the ordinance, in forbidding the use of paper milk containers, is so palpably unreasonable as to be arbitrary or capricious, so that the provision bears no reasonable relation to the protection of the public health.

Reasons for Allowance of the Writ.

(1) In holding that the ordinance is void because the 1939 state statute deprived the city of the power to forbid the use of paper milk containers, the Circuit Court of Appeals has decided an important question of local law in a way clearly in conflict with the local law.

The holding of the Circuit Court of Appeals did not follow the controlling statute. Before 1939 the city had power to forbid the use of paper milk containers. The power was granted to the city in the Illinois Cities and Villages Act of 1872 which the Illinois courts construed as giving Illinois cities broad regulatory powers over the milk industry [*Koy* v. *City of Chicago*, 263 Ill. 122, 130-1 (1914)]. This was not denied in the majority opinion. But a 1939 statute which regulates the use of paper milk containers was said in the opinion to have withdrawn some of the city's power, so that the ordinance forbidding the use of paper milk containers conflicts with what was held to be a state public policy expressed in the statute. The saving clause in the 1939 statute (section 19) provided expressly that nothing in the act should "impair or abridge" the power of any city. In holding that some of the city's power was withdrawn by reason of provisions in the statute, the Circuit Court of Appeals held that the statute did "impair or abridge" the power of cities. It thus failed to follow the plain and unambiguous language of the saving clause in the statute, as noted in the dissenting opinion, although the question of the city's power is determined by construing the statutory grant of power. The holding is thus in conflict with the controlling local law.

The Illinois courts have not construed the 1939 statute. Yet there is no Illinois case that, in construing a legislative grant of municipal power, disregards the plain language of the grant, as did the holding here. The most pertinent Illinois case is *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939). The Illinois Supreme Court, in considering the effect on a city's power of state regulations of the oil industry, there gave a broad interpretation to a saving clause less emphatic than the one involved here. The hold-

ing of the Circuit Court of Appeals conflicts with the *City of Ottawa* case, which was not mentioned in the opinion.

The holding of the Circuit Court of Appeals also violates settled rules of statutory construction. The intention of the legislature was drawn from isolated provisions of the 1939 statute rather than from the entire act. And language of the statute (the saving clause) was considered surplusage, although it is possible to give it effect.

From the language of the saving clause and the holding in the *City of Ottawa* case, it is clear that the Illinois Supreme Court would not have decided, as did the Circuit Court of Appeals, that the 1939 statute withdrew the city's power under the 1872 statute to enact the ordinance. The question is a peculiarly local one, controlled even before the decision in *Erie R. Co.* v. *Tompkins*, 304 U. S. 64 (1938), by the decisions of the local state courts.

The holding of the Circuit Court of Appeals is particularly erroneous in that it interferes with a local, state matter. The Circuit Court of Appeals has taken it upon itself to decide where the line limiting municipal power should be drawn, even though the Illinois legislature has itself drawn the line. If there is a doubt as to where the legislature drew the line, the Illinois courts will have the last word on the question. In interfering with the enforcement of a state law by the extraordinary remedy of a federal writ of injunction, the holding of the Circuit Court of Appeals conflicts with the decisions of this court in *Hawks* v. *Hamill*, 288 U. S. 52 (1933), and in *Railroad Commission of Texas* v. *Pullman Company;* 312 U. S. 496 (1941). For similar reasons the Circuit Court of Appeals should have refused in its discretion to enter a declaratory judgment that the city had been deprived of its power to enact the ordinance. Thus, if there were any doubt about

the power of the city, the Circuit Court of Appeals should have refused to decide the question. But the power of the city to enact the ordinance is so clear from the controlling statute and decisions of the state that the Circuit Court of Appeals should have determined without difficulty that the city had the power.

This local question is of great importance. The ruling adverse to the defendants means that an ordinance enacted by a legislative body representing more than 3,500,000 people is invalid. But the effect of the ruling is even more far-reaching. The holding that the 1939 Illinois statute has abridged and impaired the regulatory powers of cities over the milk industry, although the saving clause in the statute expressly provides to the contrary, deprives *all cities and villages in Illinois* of effective regulatory powers over the milk industry. And in nullifying the saving clause the holding casts doubt on the powers of cities and villages in Illinois to regulate other local matters which the state has begun to regulate.

(2) The holding of the trial court and the dictum of the Circuit Court of Appeals that the ordinance is an unreasonable exercise of the police power conflict with a long line of decisions of this court. The primary purpose of the ordinance in forbidding the use of paper milk containers is the protection of public health. The master, before whom the witnesses testified in extensive hearings, described in detail the sanitary characteristics of paper milk containers (R. 1718-29) and made specific findings that the City Council may reasonably have based its decision on evidence tending to prove that there are health hazards in the use of paper milk containers (R. 1734-35). The majority opinion of the Circuit Court of Appeals admitted that the record discloses "some evidence" that the use of paper

milk containers presents a hazard to health (R. 1794). The wisdom and propriety of forbidding the use of paper milk containers are matters for the determination of the legislative body. The conclusions of the trial court and the Circuit Court of Appeals that the ordinance is unreasonable were based upon factors that are not controlling under the applicable principles of constitutional law.

Cases establishing that the ordinance was not unreasonable are discussed in the attached brief. We note here briefly that regulations of the milk industry have been upheld by this court [*Nebbia* v. *New York*, 291 U. S. 502 (1933); *Adams* v. *Milwaukee*, 228 U. S. 572 (1911)] as well as regulations of containers [*Pacific States Box and Basket Co.* v. *White*, 296 U. S. 176 (1935)]. There are similar holdings by the Illinois Supreme Court [*Koy* v. *City of Chicago*, 263 Ill. 122 (1914) and cases there cited].

It is submitted that these reasons, which are discussed in greater detail in the attached brief, call for the exercise of this court's power of review.

Prayer of Petition.

Wherefore the petitioners respectfully pray: that a writ of certiorari be issued out of and under the seal of this court commanding the United States Circuit Court of Appeals for the Seventh Circuit to certify and send to this court for its review and determination a complete transcript of the record in the case numbered on its docket as No. 7502 and entitled Fielderest Dairies, Inc., Plaintiff-Appellee, *vs.* City of Chicago, a municipal corporation, Board of Health of the City of Chicago, Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago, Defendants-Appellants; that the judgment of the Circuit Court of Appeals may be

reversed by this court; and that the petitioners may have such other and further relief as seems just.

City of Chicago, a municipal corporation,
Board of Health of the City of Chicago,
Dr. Robert A. Black, Health Commissioner and Acting President of Board of Health of the City of Chicago,

Petitioners.

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No.

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

BRIEF IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI.

Index.

An index to this brief with table of authorities cited appears on the pages preceding the petition, *supra.*

Opinions of the courts below.

The majority and dissenting opinions of the Circuit Court of Appeals (R. 1782-1796) are reported in 122 F. 2d 132 (1941); the opinion of the District Court (R. 1752-1756) is reported in 35 F. Supp. 451 (1940).

Statement of jurisdiction.

A statement of the grounds on which the jurisdiction of this court is invoked appears in the petition, *supra*, pp. 7-8, under the heading, "Basis of Jurisdiction of This Court".

Statement of the case.

A statement of the case appears in the petition, *supra*, pp. 1-7 under the heading, "Statement of the Matter Involved".

Specification of errors.

(1) The Circuit Court of Appeals erred in holding the provision of the Chicago ordinance to be in conflict with the public policy of the State of Illinois.

(2) The Circuit Court of Appeals erred in directing the issuance of an injunction and declaratory judgment in favor of the plaintiff.

(3) The Circuit Court of Appeals erred in not reversing the finding of the trial court that the ordinance is unreasonable and unconstitutional if it forbids the use of paper milk containers.

(4) The Circuit Court of Appeals erred in not holding that the judgment of the trial court should be reversed and a decree entered in accordance with the findings in the master's report.

Summary of Argument.

I. The Illinois Milk Pasteurization Plant Act of 1939 did not deprive the city of power to pass the ordinance.

The Illinois Cities and Villages Act of 1872 as construed by the Illinois courts granted power to the city to forbid the use of paper milk containers. The power was not impaired by the Milk Pasteurization Plant Law of 1939. This is clear from an analysis of the language and a consideration of the purpose of the saving clause in the statute. The Circuit Court of Appeals' construction of the 1939 statute disregards the plain language of the saving clause and violates elementary rules of statutory construction. The Illinois Supreme Court would not have decided the case as did the Circuit Court of Appeals. The decision of the Circuit Court of Appeals cuts down the power of all cities and villages in Illinois to make effective sanitary regulations of the milk industry. This court should review and decide on the merits the question of the city's power.

II. The ordinance is not invalid on constitutional grounds.

(a) The principles governing the validity of the ordinance under the due process clauses of the federal and Illinois constitutions are well settled. Debatable questions as to the reasonableness of the ordinance are for the legislative body and not the courts to determine. The courts may declare health legislation invalid only if palpably arbitrary or capricious. Regulations of containers and many regulations of the milk industry have been sustained.

(b) Evidence in the record shows that to forbid the use of paper containers for delivering milk is not unreasonable. The master found that there were possible public

health hazards in the use of paper milk containers. The Circuit Court of Appeals admitted that there was evidence in the record that their use presents a hazard to health. The presumption of validity of the ordinance is as strong as when the ordinance was enacted. The use of paper milk containers elsewhere, their regulation by the State of Illinois and in the model ordinance of the United States Public Health Service, the use of paper containers for other purposes, and the proposal by the Chicago Board of Health that the City Council permit their use for delivering milk are factors that are immaterial both in fact and in law. The prohibition of the use of paper milk containers is not so unrelated to any possible danger to the public health as to be considered an arbitrary interference with property rights.

ARGUMENT.

I.

The Illinois Milk Pasteurization Plant Act of 1939 did not deprive the city of power to pass the ordinance.

A question of construction of Illinois statutes is presented. The Circuit Court of Appeals held the ordinance invalid on the ground that it is contrary to the public policy of the state as found in an Illinois statute, the so-called Milk Pasteurization Plant Law of 1939 (Laws of Illinois, 1939, pp. 660-666; Ill. Rev. Stat. 1939, ch. 56½, secs. 115-134). Illinois cities derive their powers from the state legislature and have only such powers as have been delegated to them by the legislature. *City of Chicago* v. *Murphy*, 313 Ill. 98, 101 (1924). Consequently the acts of the Illinois General Assembly must be looked to for the existence and extent of any power assumed to be exercised by a city.

There is no constitutional objection to regulation of the same subject by statute and by ordinance. In *City of Chicago* v. *Union Ice Cream Co.*, 252 Ill. 311 (1911), the court said (p. 314):

> ". . . The great weight of authority is to the effect that the legislature may confer police power upon a municipality *over subjects within the provisions of existing State laws*. An act may be a penal offense under the laws of the State, and further penalties, under proper legislative authority, may be imposed for its commission by municipal ordinances. The enforcement of one would not preclude the enforcement of the other. (Citing authorities.) Municipal corporations are bodies politic, vested with many political and legislative powers for local government and police regula-

tions, established to aid the government by the State. The necessity for their organization may be found in the density of the population and the conditions incidental thereto. *Because of this, the municipal government should have power to make further and more definite regulations than are usually provided by general legislation* and to enforce them by appropriate penalties." (Italics added.)

Power of Cities under the 1872 Act.

As originally enacted in 1872, article 5 of the Illinois Cities and Villages Act contained the following provisions:

"Section 1. The city council in cities, and the president and the board of trustees in villages, shall have the following powers:

"Section 50. To regulate the sale of meats, poultry, fish, butter, cheese, lard, vegetables, and all other provisions, and to provide for place and manner of selling the same.

"Section 53. To provide for and regulate the inspection of meats, poultry, fish, butter, cheese, lard, vegetables, cotton, tobacco, flour, meal and other provisions.

"Section 66. To regulate the police of the city or village and pass and enforce all necessary police ordinances.

"Section 78. To do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease." (Public Laws of Illinois, 1871-72, pp. 231-233.)

Except for minor amendments not material here, there have been no changes in these provisions. (Sections 65, 65.49, 65.52, 65.65 and 65.77, ch. 24, Ill. Rev. Stat. 1939.)

These provisions have been interpreted by the Illinois Supreme Court to grant cities very broad regulatory

powers over the milk industry. A leading case is *Koy* v. *City of Chicago*, 263 Ill. 122 (1914), where the court held valid an ordinance requiring the use of a certain apparatus for the recording of temperatures during the pasteurization of milk. The court said (p. 127) of the above-quoted sections of the Cities and Villages Act:

> "The regulation of the sale of milk and its products is essential to the preservation of the public health, and authority for its regulations is clearly given to the city council by paragraphs 50, 53, 66 and 78 of section 1 of article 5 of the Cities and Villages act. (Citing cases)

A more detailed statement of the power of the city under the statute was also made (pp. 130-131):

> "* * * There is no article of food in more general use than milk; none whose impurity or unwholesomeness may more quickly, more widely and more seriously affect the health of those who use it. The regulation of its sale is an imperative duty which has been universally recognized. This regulation in minute detail is essential, and extends from the health and keeping of the cows which produce the milk, through all the processes of transportation, preservation and delivery to the consumer. Not only may laws and ordinances require that milk offered for sale shall be pure, wholesome and free from the bacilli of any disease, but they may and do, in order to produce this result, prescribe the manner in which such purity, wholesomeness and freedom from disease shall be secured and made to appear. The cows may be required to be registered with a designated public authority; the dairies to be conducted and managed according to prescribed regulations, and, together with the dairy utensils, subjected to inspection; the receptacles in which milk is contained to be of prescribed character and capacity; the labels to be placed according to fixed regulations and to contain certain required information; the milk to be prepared in the manner, at the

> times and by the means directed and at all times to be subject to inspection. These may be drastic restrictions upon a private business, but experience and the increasing knowledge of the causes of disease and the agencies of its propagation have demonstrated the necessity of such restrictions to the preservation of the public health. The object of all such restrictions is the preservation of the public health, and as a means to that end the protection of the general public against dishonest vendors of milk. They all impose inconveniences and expense upon the dealers in milk, but they are not on that account unreasonable, unjust or oppressive. Legislatures and city councils, in the exercise of the police power, may prohibit all things hurtful to the health and safety of society even though the prohibition invade the right of liberty or property of an individual."

The power of Illinois cities to regulate every detail of the milk industry is here said to extend to requiring "the receptacles in which milk is contained to be of prescribed character and capacity." Before the *Koy* case the state Supreme Court in *City of Chicago* v. *Bowman Dairy Co.*, 234 Ill. 294 (1908), had held valid an ordinance requiring milk bottles to contain a permanent indication of their capacity.

These broad regulatory powers over the milk industry were possessed by the City of Chicago when it passed a comprehensive milk ordinance on January 4, 1935 (R. 23-112). The ordinance contains regulations of many aspects of the production and distribution of milk. Included was the particular provision involved in this case:

> "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles." (R. 108.)

This language required the use of the familiar glass milk containers. (So held the Circuit Court of Appeals in this

case, R. 1788, the construction of the ordinance being one of the issues litigated in the lower courts.)

The language of the *Koy* case that a city has power under the Cities and Villages Act to require a milk receptacle to be of prescribed character shows clearly that the City of Chicago had power to require milk to be delivered in standard milk bottles, even though the use of a receptacle that was not a standard milk bottle—such as a paper container—was prohibited. So also other devices of the dairy industry that did not meet the requirements of the ordinance were prohibited. Necessarily a regulation that prescribes a standard forbids what does not meet the standard. This was pointed out by the Illinois Supreme Court in *Haggenjos* v. *City of Chicago,* 336 Ill. 573 (1929), where an ordinance that prohibited parking automobiles on streets during certain hours of the day was attacked on the ground that the power to regulate the use of streets did not include the power to prohibit. Of the relative terms "regulate" and "prohibit" the Illinois Supreme Court said (pp. 576-577):

> "It has been said often that the power to regulate does not include the power to prohibit; and this is true in the sense that mere regulation is not the same as absolute prohibition. Regulation of business or action implies the continuance of such business or action, while prohibition implies its cessation. On the other hand, *the power to regulate implies the power to prohibit except upon the observation of authorized regulation.* The ordinance does not prohibit the standing of vehicles on all streets throughout the city or at all times, but only on some streets at some times." (Italics added)

The power to regulate the milk industry and milk containers thus included the power to require a prescribed container, and this power included in turn the power to forbid

the use of a container that did not meet the requirements imposed. Under the 1872 statute the City of Chicago thus had power to forbid the use of paper milk containers and to enact the ordinance so providing.

Effect of the 1939 statute on the power of cities.

The title of the Milk Pasteurization Plant Law of 1939 is as follows:

> "An Act regulating the handling, processing, labeling, sale and distribution of pasteurized milk and pasteurized milk products." (Laws of Illinois, 1939, p. 660; Ill. Rev. Stat. 1939, ch. 56½, sec. 115.)

Sections 1 to 18 of the act contain numerous regulatory provisions, including a requirement in section 15, item 10, that "single service containers . . . shall be manufactured and transported in a sanitary manner". Section 19 is a saving clause. It is the contention of the defendants that this saving clause retains intact the regulatory powers of the city that existed before the enactment of the statute. Section 19 reads as follows:

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk and pasteurized milk products, provided that such regulation not permit any person to violate any of the provisions of this Act." (Ch. 56½, sec. 133, Ill. Rev. Stat. 1939.)

The meaning of this saving clause is the vital question on this branch of the case. The Circuit Court of Appeals holds that it did not prevent the impairment by the statute of some of the city's power. The defendants contend that its positive and unambiguous language has been disregarded by this holding.

It is not necessary to analyze the 1939 act in detail to see if it contains anything that is not covered by the terms of

the saving clause. The saving clause is in the language of the title of the act. The title describes the act as one regulating the "handling, processing, labeling, sale and distribution" of milk, and the saving clause states that nothing in the act shall impair the power of the city to regulate the "handling, processing, labeling, sale or distribution" of milk—the identical subjects named in the title. The Illinois constitution contains the common provision that an act may embrace only the subject expressed in the title (article 4, section 13, Illinois Constitution of 1870); and any subject in the act that is not embraced in the title is invalid. By using the language of the title in the clause that saves the power of cities and villages, the legislature thus necessarily saved to them their pre-existing power over the entire subject-matter covered by the act. The identity of the language in the saving clause with that in the title thus makes the saving clause as broad as it could possibly be made, so that, whatever aspects of the milk industry may be subjected to state-wide regulation by the statute, cities and villages retain to the fullest extent every power that they had theretofore. This identity of language alone indicates unmistakably that the saving clause preserved the city's power to forbid the use of paper milk containers. But the same result is reached by considering other aspects of the saving clause.

There is only one limitation in the saving clause on this complete retention of the power of cities: the proviso says that city regulation shall "not permit any person to violate any provisions" of the act. By expressing only one exception to the retention of power the legislature has indicated an intention that there is no other exception. This is a clear case for the application of the rule that the expression of one exception excludes other exceptions [see

People v. *Deep Rock Oil Corp.*, 343 Ill. 388, 401 (1931)]. The ordinance forbids the use of paper milk containers and does not permit a violation of the act. Not being within the exception, the power of the city has been retained.

Only a cursory reading of the saving clause indicates an intention not to make any change whatever in the powers of cities to regulate the sale of milk, including the power to forbid the use of paper milk containers. A detailed exposition of the language of the section leaves no possible doubt of this intention:

"*Nothing in this act . . .*". In spite of these self-explanatory words, the Circuit Court of Appeals finds *something* in the act that indicates a public policy affecting the powers of cities.

"*. . . shall impair or abridge . . .*". These words mean that the act was intended not to weaken or curtail the power which cities had before the act was passed. Yet the Circuit Court of Appeals holds squarely that the statute makes the city's power less than it was before.

"*. . . the power of any city, village or incorporated town . . .*". The power of cities to regulate milk was derived from the Illinois Cities and Villages Act of 1872 quoted above and interpreted by the Illinois Supreme Court in the *Koy* and other cases.

"*. . . to regulate . . .*". "To regulate" means "to control, govern, or direct by rule or regulation, to subject to guidance or restriction" (Oxford English Dictionary, *regulate*). "Regulate" was the very word used in the grant of power in the Illinois Cities and Villages Act of 1872 quoted above (cities were given power "to regulate the sale of . . . provisions", and to ". . . make all regulations which may be necessary or expedient for the promo-

tion of health or the suppression of diseases"). Under that act, as was stated in the *Koy* case, the power to regulate the milk industry included the power to prescribe the character of the receptacle in which milk is sold; and the power to regulate containers included the power to forbid the use of paper containers. The use of the same word "regulate" in the saving clause in the 1939 statute evidences an unmistakable legislative intention that cities may continue to forbid the use of paper containers.

". . . *the handling, processing, labeling, sale and distribution of pasteurized milk and pasteurized milk products*, . . .". As we have noted, these words describe the field of regulation described in the title of the act. Clearly the words "sale and distribution" include the type of container in which the product is sold or distributed.

". . . *provided such regulation not permit any person to violate any of the provisions of this act.*" As we have noted, this single limitation on the power of cities retained by the act indicates an intention that there are no other exceptions. A regulation that forbids the use of particular containers does not permit a violation of any state regulation. This would only be true of a regulation that permitted a type of container forbidden by the statute. The legislature's reason for inserting this proviso in the saving clause is apparent: the other language in the saving clause is so broad that, without the proviso, a city regulation might be valid even though it permitted a violation of the statute.

The purpose of the saving clause is clear. Within the confines of the State of Illinois are many urban and rural areas. Many municipalities are so small that their officers are unable to adopt and enforce adequate regulations of the milk industry. There may be a need for state regula-

tion of the milk industry in these small municipalities as well as in rural areas. Entirely different are the problems of regulation in a municipality like the City of Chicago, where the daily consumption of milk is about 1,300,000 quarts (R. 966) and there are about 140 dairies (R. 986). The necessity for municipal regulation that differs from state regulation is clearly recognized in *City of Chicago* v. *Union Ice Cream Co.*, 252 Ill. 311, 314 (1911), quoted above (pp. 19-20). It was this necessity that the legislature had in mind in stating in plain and unambiguous language that the power of cities and villages should remain intact.

The Circuit Court of Appeals' construction of the 1939 statute.

While the saving clause says that the 1939 statute shall not impair or abridge the city's power, the Circuit Court of Appeals holds that the city's power is less than it was before the statute was passed. The majority opinion of the Circuit Court of Appeals thus disregards the plain language of the statute. This was the view of the dissenting judge, who is his opinion said that the saving clause "was not meaningless or surplusage, as announced in the majority opinion" but was "in the nature of a declaratory clause maintaining the existing status, inserted by the legislature in an abundance of caution, to assure municipalities that their power to act in the premises was not taken away" (R. 1795). It is significant that the majority opinion does not even mention article 5 of the Illinois Cities and Villages Act of 1872 which, as quoted above, granted the City of Chicago broad regulatory powers over the milk industry.

From the fact that the statute and the regulations of the state Department of Health contain a few regulations

of paper containers (such as the provision in item 10 of section 15 that "single service containers . . . shall be manufactured and transported in a sanitary manner"), the majority opinion concludes that "the use of single service containers such as used by the plaintiff for the distribution of milk is permitted and approved upon compliance with the Act" (R. 1791). The opinion stresses the fact that the plaintiff has complied with the state requirements and has been issued a certificate of approval:

> "By this token it (the plaintiff) has been authorized by the state to sell and distribute its product within the confines of Illinois in single service containers. The city of Chicago, however, by the prohibition contained in its ordinance, denies this right conferred by the State." (R. 1791-92.)

This conclusion fails to take into account the rule that in construing a statute the entire act must be considered. Any certificate of approval granted to the plaintiff was granted under the statute and, if the plaintiff may be said to have a "right conferred by the state" to use a container that merely meets state requirements, that right was derived from the statute. This very statute said that the power of cities to forbid the use of paper containers was not impaired. Certainly the "certificate of approval" and any right to use a particular container are effective only within the purview of the statute. As a result a certificate or right granted under the statute is subject to the municipal regulation which the statute expressly permits. When the entire act is considered, this is what the legislature said. The prohibition in the ordinance does not deny a right conferred by the statute when the statute itself says that the prohibition may be imposed.

The basic fallacy in the reasoning of the Circuit Court of Appeals is shown by following the steps by which the con-

clusion of invalidity was reached. The reasoning of the opinion is: the statute regulates paper containers and permits their use; in prohibiting the use of what the statute permits, the ordinance conflicts with the statute; the rule therefore applies that ordinances may not conflict with the state law; and the saving clause may not be construed to give the city "authority to outlaw that which the state has legalized". The opinion finds the conflict, not with the statute as a whole, but with isolated sections that mention paper containers. The court does not even refer to the saving clause in the statute until *after* it has determined that the ordinance violates a public policy found in another part of the statute.

In finding a public policy from only a part of the statute and in disregarding the saving clause, the majority opinion violates the familiar rule that in construing a writing the entire writing is to be considered. See *People* v. *Whealan*, 353 Ill. 500 (1933), at p. 506:

> "It is a fundamental rule of statutory construction that the intention of the lawmaker should be deduced from a view of the whole statute and of every material part of it." (Citing many cases.)

Another cardinal rule of construction is violated by the opinion in the disregarding of the language of the saving clause: words should not be held to be surplusage if they may possibly be given effect. In *Crozer* v. *People*, 206 Ill. 464 (1904), the rule was stated. (pp. 469-470)

> "It is a cardinal rule of construction that a statute should be so construed that, if it can be prevented, no clause, sentence or word shall be superfluous, void or insignificant, but that it shall be so construed, if possible, that every sentence and word shall be given its ordinary meaning and acceptation. (*Decker* v. *Hughes*, 68 Ill. 33; *Thompson* v. *Bulson*, 78 *id.* 277; *Perteet* v. *People*, 65 *id.* 230.) In the last case the following lan-

guage from Lord Coke is quoted: *'The good expositor makes every sentence have its operation; gives effect to every word; will not construe it so that anything shall be vain or superfluous, but so expressed that one part of the act may agree with the other and all may stand together.'* " (Italics added.)

In view of the language of the saying clause, the opinion finds in the statute a declaration of public policy that is not there. This again violates a cardinal rule of statutory construction, stated in *Sup* v. *Cervenka,* 331 Ill. 459 (1928), where the Illinois Supreme Court said (pp. 461-462):

> "It is an elementary rule in the construction of a statute that the intention of the legislature must primarily be determined from the language of the statute itself and not from conjecture *aliunde.* When that language is plain and unambiguous and conveys a clear and definite meaning there is neither necessity nor authority for resorting to statutory construction. *If the words of a statute are plain and the legislative purpose manifest, that purpose must be given effect. The courts have no legislative powers,* and in the interpretation and construction of statutes *their sole function is to determine,* and within the constitutional limits of the legislative power to give effect to, *the intention of the legislature.* They cannot read into a statute something that is not within the manifest intention of the law-making body as gathered from the statute itself. To depart from the meaning expressed by the words is to alter a statute—it is to legislate and not to interpret. . . ." (Italics added)

It is difficult to understand why the Circuit Court of Appeals went as far as it did in disregarding the language of the saving clause. The opinion says that, if the saving clause was given effect, "it would make the state subservient to the city". The effect of the opinion is that it is beyond the power of a state legislature to prescribe minimum standards to be observed throughout the state and at the same time to authorize municipalities to fix

more stringent standards if they consider it necessary to do so. If, in such a situation, the state could be said to be "subservient", it has voluntarily assumed that status and has the power to change it when it sees fit. If the state legislature sees nothing incongruous in such a relationship with its municipalities, the mere fact that it may not coincide with the court's conception of the proper symmetrical organization of government is immaterial. Furthermore, the state is not subservient to the city if the state permits what the city forbids; each is merely regulating in its own sphere to meet its own particular needs. There is no rule of law that, regardless of the scope of the statutory grant of authority, the municipality may not forbid what the state permits. There is, of course, a rule that when a statute and an ordinance conflict or when an ordinance is contrary to a public policy stated in a statute, the statute controls.* But this rule applies only when the contrary intention of the legislature is not revealed by the express language of the statute. The rule has no application when the intention of the legislature is expressed in clear language as in the saving clause of the Milk Pasteurization Plant Law of 1939. Nevertheless, this seems to be the rule applied by the two majority judges of the Circuit Court of Appeals.

The Circuit Court of Appeals does not mention the most pertinent Illinois case construing legislative grants of municipal power: *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939). It is the most pertinent case because the statute construed contained a saving clause.

The *City of Ottawa* case involved a 1930 ordinance that

* This rule has been applied in a number of Illinois cases, some of which are cited in the opinion of the Circuit Court of Appeals. *Village of Atwood* v. *Cincinnati, etc. R. Co.*, 316 Ill. 425 (1925); *City of Marengo* v. *Rowland*, 263 Ill. 531, 534 (1914); *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311, 315 (1911); *City of Chicago* v. *Drogasawacz*, 256 Ill. 34, 37 (1912).

contained detailed regulations of gasoline filling stations; the defendant was accused of erecting a filling station without frontage consents as required by the ordinance. An Illinois statute of 1919 regulated "the storage, transportation, sale and use of gasoline" and authorized the state Department of Trade and Commerce to adopt regulations "except in cities or villages where regulatory ordinances upon the subject are in full force and effect." The question in the case was whether or not the saving clause was operative, in view of the provisions of the Cities and Villages Act of 1872* authorizing cities "to regulate and prevent storage . . . of petroleum" and an ordinance of 1916 regulating only the storage of gasoline and not undertaking to regulate filling stations. The court held that by virtue of the 1916 ordinance the city had sufficiently exercised its powers under the 1872 statute to enable it either to amend the 1916 ordinance *or to adopt a broader one;* and that consequently the 1930 ordinance was authorized and valid.

This *City of Ottawa* case presents a great contrast to the holding of the Circuit Court of Appeals. The Illinois Supreme Court held there that the 1919 saving clause, which was less extensive than the one here, preserved the pre-existing powers of the city granted in the 1872 act. The Illinois Supreme Court did not disregard the saving clause but interpreted it broadly and gave full effect to it. Here the Circuit Court of Appeals has not only failed to consider the 1872 act, but has disregarded the language of the 1939 saving clause. It has also disregarded this recent decision by the Illinois Supreme Court showing how

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* This is the very statute involved in the case at bar, article 5 of the Cities and Villages Act of 1872 (Public Laws of Illinois, 1871-72, pp. 231-233). Article 5 contains broad grants of powers to cities and villages. While the *City of Ottawa* case involved section 65 of article 5, the instant case involves sections 50, 53, 66, and 78.

the state courts construe legislative grants of municipal power. Undoubtedly the Illinois Supreme Court would not have decided the case at bar as has the Circuit Court of Appeals.

It is true that the majority opinion of the Circuit Court of Appeals attempts to give the saving clause some vitality by saying:

> "The courts of Illinois have frequently recognized that power exercised by municipalities may be conferred or withdrawn by implication (citing cases). It therefore appears reasonable that the sole purpose of the saving clause was to prevent a construction by implication, withdrawing the vast authority which the city had theretofore had over the milk industry. . . . The purpose of the saving clause, in our judgment, was to preserve in the city the unquestioned right to continue in a field which had been entered by the state, and in which, thereafter, each should have co-extensive power and authority." (R. 1792-93.)

If the city and the state have "co-extensive power and authority," it would seem that the city has power to forbid the use of paper milk containers; the state clearly has the power even though it has not been exercised. The court's own statement of the purpose of the saving clause is thus inconsistent with its holding that the city regulation is invalid.

This self-contradiction is inevitable, for the language of the opinion cannot conceal the fact that the holding nullifies the saving clause. If there is a need for both city and state regulations, as evidenced by the saving clause, there are bound to be differences between them. Any city regulation that goes further than the minimum state regulations forbids what the state regulations permit. Under the holding of the Circuit Court of Appeals, all that remains of the city's power to protect its citizens from a

contaminated milk supply is the empty authority to make regulations that coincide exactly with state regulations. It seems clear that this holding invalidates other provisions of the milk ordinances of Illinois municipalities. For example, section 7 of the 1939 statute contains labeling provisions, requiring milk containers to be marked with the name of the contents, with the word "pasteurized" if the contents are pasteurized, and with the name and the post office address of the pasteurization plant. The labeling provisions in the Chicago ordinance (sec. 3090, R. 37-38) are much more extensive, requiring (among other things) that the date on which the milk is to be sold shall be marked on the container, a regulation designed to insure that too great an interval of time does not elapse between pasteurization and the sale to the consumer. The statute permits the use of undated containers and approves their use; while the ordinance prohibits the use of undated containers. If the holding of the Circuit Court of Appeals stands, the city requirement is invalid because it conflicts with the "public policy" of the state as expressed in the statute.

The effect of the decision of the Circuit Court of Appeals is far-reaching. Not only the City of Chicago but every city and village in Illinois are deprived of power to make effective local regulations of the milk industry. And the decision goes further. The boundary between the fields of state and local regulations may not be clearly defined. The decision of the Circuit Court of Appeals in effect takes away from the state legislature the power to fix the boundary and the court, in the exercise of its function to construe statutes, assumes the power itself. In fixing the boundary where it did, the Circuit Court of Appeals has affected adversely the regulatory powers of Illinois cities

and villages over other subjects that the state has begun to regulate.

There are thus important reasons why this court should review and reverse the judgment of the Circuit Court of Appeals.

* * * * * * *

The defendants urge this court to review and decide on the merits the local question of the city's power.

The defendants do not ask the court to review and reverse the case on the ground that, since the question of the power of the city to enact the ordinance is a local one to be decided by the state courts alone, the Circuit Court of Appeals should have refused to decide it. The position of the defendants on this aspect of the case requires an explanation.

It may be that the granting of the injunction and the declaratory judgment constitutes an unjustified interference by a federal court with local, state matters. The 1939 state statute, which is held to deprive the city of power to require the use of a particular kind of milk container, has not been construed by the state courts. More than a narrow controversy between two litigants is involved. The problem is one of public law—the construction of a legislative grant of municipal power—which affects all municipalities in Illinois. In this situation the Circuit Court of Appeals should perhaps have been reluctant to interfere by employing the extraordinary remedy of a federal writ of injunction. *Hawks* v. *Hamill*, 288 U. S. 52 (1933); *Railroad Commission of Texas* v. *Pullman Co.*, 312 U. S. 496 (1941). Similarly it would seem that a federal court should perhaps have exercised its discretion to refuse to enter a declaratory judgment. The Federal Declaratory Judgment Act (Act of June 14, 1934, 48 Stat. 955, 28 U. S. C., Sec.

400) gives federal courts discretion to grant or withhold the declaratory relief sought. This was noted in *American Automobile Insurance Company* v. *Freundt*, 103 F. 2d 613 (C. C. A. 7th, 1939) where the court said (p. 619):

> "It is clear from the report of the Senate Judiciary Committee that the Committee understood that under the proposed Act the district courts would enjoy a measure of discretion in the matter of granting or withholding declaratory relief."

In *Borchard on Declaratory Judgments* (1934) one of the grounds for withholding declaratory relief was stated as follows (p. 111):

> "The declaration will be refused where in the court's opinion it is inexpedient for some reason outside the record, such as public policy, or where the question might be raised again in some other way or where it would be embarrassing in the operations of government."

Nevertheless the defendants do not ask this court to rule merely that the Circuit Court of Appeals should not have decided the question of the power of the city to enact the ordinance. To remand the cause to the District Court with directions to retain it pending the determination of the state issue in the state courts, as was done in the *Pullman Company* case, would bring much inconvenience to the litigants. While the lower courts should perhaps have refused to consider the question at all, their rulings adverse to the city have clouded the powers of Illinois municipalities. Only by obtaining from this court a decision that the city has power to enact the ordinance may the city be restored to the position it had before the decision by the Circuit Court of Appeals. The suit was begun more than two and a half years ago and has gone through the lengthy process of extensive master's hearings, hearings

in the trial court on objections to the master's report, an appeal to the Circuit Court of Appeals, and now a petition for certiorari to this court.* The question of the city's power—unlike the local questions in the *Hawks* and *Pullman Company* cases—is free from difficulty. If the cause were remanded to await a determination of the question by the highest state court, the far-reaching effects of the action of the Circuit Court of Appeals in cutting down the powers of Illinois municipalities will remain operative for many months to come. The damage done should be remedied as soon as possible.

For these reasons the defendants urge this court to decide the question of the power of the city to enact the ordinance under the 1872 and 1939 state statutes.

II.

The ordinance is not invalid on constitutional grounds.

The validity of the ordinance under the federal and Illinois constitutions was questioned in the complaint. It alleged (R. 11) that the ordinance deprives the plaintiff

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* In connection with the duration of the litigation, it is important to realize that the defendants have been unable to take advantage of the provisions of section 266 of the Judicial Code (28 U. S. C. 380) for the speedy determination of constitutional questions in the trial court and on appeal. This is the familiar provision that an application for an injunction to restrain state officers in the enforcement of a statute on the ground of its unconstitutionality shall be heard and determined by three judges and that a direct appeal may be taken to this court from the decree granting or denying the injunction. In this case the plaintiff sought an injunction on the ground that the ordinance was unconstitutional, the trial court so found, and the trial court entered the injunction prayed. Since the question is the constitutionality of an ordinance rather than the constitutionality of a statute, defendants have been unable to have the matter determined by a three-judge trial court or to appeal directly to this court. There have been a number of decisions to the effect that section 266 of the Judicial Code does not apply to ordinances. *Cumberland Telephone & Telegraph Co.* v. *City of Memphis*, 198 F. 955 (D. C. Tenn. 1912); *City of Baton Rouge* v. *Baton Rouge Waterworks Co.*, 30 F. 2d 895 (C. C. A. 5th, 1929).

of the equal protection of the laws and of its property without due process of law in violation of the fourteenth amendment to the federal constitution and article 2, section 2 (a due process clause similar to the fourteenth amendment clause) of the Illinois constitution. Most of the evidence heard by the master dealt with the reasonableness of the ordinance as an exercise of the police power. The trial court found, contrary to the master's findings (R. 1734), that the ordinance was unconstitutional (R. 1757). The majority opinion of the Circuit Court of Appeals states (R. 1794) that it does not "discuss at length or decide" this question. However, the opinion continues with a brief discussion of the question that indicates that the two majority judges considered the ordinance unconstitutional. The presumption that the ordinance is valid is said to be "little more than a shadow" because, when the ordinance was passed, the use of paper containers was in its incipient stage. And the evidence in the record that the use of such containers presents a hazard to health is said to carry "little, if any, conviction" in view of other factors—chiefly the fact that the containers are permitted elsewhere.

We discuss as one question (as did the lower courts) the reasonableness of the ordinance under the due process clauses of the federal and Illinois constitutions, although one clause presents a question of federal law and the other a question of state law; as shown by the cases cited below, the same principles govern each clause.

In casting doubt on the constitutional validity of the ordinance, the Circuit Court of Appeals has committed the error of substituting its judgment for the judgment of the Chicago City Council as to the need for the ordinance. Even though only a dictum, this judicial pronouncement of

the unreasonableness of the ordinance is an interference with legislative discretion in view of the evidence in the record. And the constitutional question must be decided if this court holds that the city had power to pass the ordinance. For these reasons the law as to the validity of legislation enacted under the police power and the evidence about the possible public health hazards in the use of paper milk containers must be considered.

(a) Principles governing the validity of the ordinance under the due process clause.

The rules for determining the reasonableness of legislation enacted under the police power have been announced in many opinions. We note a few illustrative cases that indicate the scope of judicial review. In *Standard Oil Company* v. *City of Marysville*, 279 U. S. 582 (1928), the court considered the validity of an ordinance which required that all tanks used for the storage of petroleum products be placed underground. Considerable evidence was heard about the relative safety of storage above and beneath the ground. Mr. Justice Stone delivered the opinion of the court and said (p. 584):

> "We need not labor the point, long settled, that where legislative action is within the scope of the police power, fairly debatable questions as to its reasonableness, wisdom and propriety are not for the determination of courts, but for that of the legislative body on which rest the duty and responsibility of decision." (Citing many cases.)

In *Laurel Hill Cemetery* v. *San Francisco*, 216 U. S. 358 (1910), the court considered the validity of an ordinance which prohibited the burial of the dead within the city and county limits. The ordinance was attacked on the ground that there was no hazard to public health in the main-

tenance of cemeteries within cities. The court in its opinion (by Mr. Justice Holmes) showed clearly its reluctance to substitute its judgment for that of the municipal legislative body. (p. 365):

> "But the propriety of deferring a good deal to the tribunals on the spot is not the only ground for caution. If every member of this bench clearly agreed that burying grounds were centers of safety, and thought the board of supervisors and the supreme court of California wholly wrong, it would not dispose of the case. There are other things to be considered. Opinion still may be divided, and if, on the hypothesis that the danger is real, the ordinance would be valid, we should not overthrow it merely because of our adherence to the other belief. Similar arguments were pressed upon this court with regard to vaccination, but they did not prevail. On the contrary, evidence that vaccination was deleterious was held properly to have been excluded." (Citing *Jacobson* v. *Massachusetts*, 197 U. S. 11 (1904), where the compulsory vaccination statute of Massachusetts was held valid.)

Schmidinger v. *Chicago*, 226 U. S. 578 (1912), involved the validity of an ordinance prescribing the weights for loaves of bread and prohibiting the sale of any loaves of bread which did not comply with the prescribed weights. Concerning the validity of this ordinance the court said (pp. 587-8):

> "* * * It is contended that the limitation of the right to sell bread which this ordinance undertakes to make in fixing a standard loaf * * * is such an unreasonable and arbitrary exercise of legislative power as to render it unconstitutional and void. This court has frequently affirmed that the local authorities intrusted with the regulation of such matters, and not the courts, are primarily the judges of the necessities of local situations calling for such legislation, and the courts may only interfere with laws or ordinances

> passed in pursuance of the police power where they are so arbitrary as to be palpably and unmistakably in excess of any reasonable exercise of the authority conferred." (Citing many cases.)

The presumption that the ordinance is valid is as strong on appeal as in the trial court. In *So. Carolina State Highway Dept.* v. *Barnwell Bros.*, 303 U. S. 177 (1936), a three-judge district court enjoined the enforcement of a statute forbidding the use on highways of trucks exceeding a prescribed width. In reversing the decision of the trial court, Mr. Justice Stone said at pp. 191-2:

> "Since the adoption of one weight or width regulation, rather than another, is a legislative not a judicial choice, *its constitutionality is not to be determined by weighing in the judicial scales the merits of the legislative choice and rejecting it if the weight of evidence presented in court appears to favor a different standard.* (Citing cases.) Being a legislative judgment it is presumed to be supported by facts known to the legislature unless facts judicially known or proved preclude that possibility. Hence, in reviewing the present determination *we examine the record; not to see whether the findings of the court below are supported by evidence, but to ascertain upon the whole record whether it is possible to say that the legislative choice is without rational basis.* (Citing cases.) Not only does the record fail to exclude that possibility, but it shows affirmatively that there is adequate support for the legislative judgment." (Italics added.)

The Illinois Supreme Court applies the same rules as the United States Supreme Court in considering the validity of legislation enacted under the police power. See *People* v. *Quality Provision Co.*, 367 Ill. 610 (1938), where the court noted that legislation will not be held unreasonable if the subject may be regarded as debatable (p. 614). See also *Gundling* v. *City of Chicago*, 176 Ill. 340 (1898);

City of Chicago v. *Bowman Dairy Co.*, 234 Ill. 294 (1908); *City of Chicago* v. *Arbucle*, 344 Ill. 597, 604-5 (1931).

These principles have recently been applied to uphold the regulation of containers in a case that seems controlling in the case at bar: *Pacific States Box & Basket Co.* v. *White*, 296 U. S. 176, 181-182 (1935). The regulation there held valid required that raspberries and strawberries be packed only in certain containers called "hallocks" of specified dimensions. One of the reasons ~~those~~ given by Mr. Justice Brandeis for holding the regulation not invalid was that "the character of the container may be an important factor in preserving the condition of raspberries and strawberries, which are not only perishable but tender." At page 182 Mr. Justice Brandeis said:

> "Different types of commodities require different types of containers; and as to each commodity there may be reasonable difference of opinion as to the type best adapted to the protection of the public. Whether it was necessary in Oregon to provide a standard container for raspberries and strawberries; and, if so, whether that adopted should have been made mandatory, involve questions of fact and of policy, the determination of which rests in the legislative branch of the state government. The determination may be made, if the constitution of the State permits, by a subordinate administrative body. With the wisdom of such a regulation we have, of course, no concern. We may enquire only whether it is arbitrary or capricious. That the requirement is not arbitrary or capricious seems clear. That the type of container prescribed by Oregon is an appropriate means for attaining permissible ends cannot be doubted."

A great variety of regulations of the milk industry have been sustained. In *Koy* v. *City of Chicago*, 263 Ill. 122, 130 (1914), the Illinois Supreme Court termed the regulation of the sale of milk "an imperative duty." *Nebbia* v. *New*

York, 291 U. S. 502 (1933), upheld a state law that authorized an administrative board to regulate the price of milk. (The opinion of Mr. Justice Roberts at pp. 521-530 contains a comprehensive review of cases involving police power regulations.) We cite other cases holding milk regulations valid as indicated:

Adams v. *Milwaukee*, 228 U. S. 572, 583 (1911), an ordinance prohibiting milk to be brought into the city unless it was produced by tuberculin tested cattle.

Commonwealth v. *Wheeler*, 205 Mass. 384, 91 N. E. 415 (1910), a statute fixing a minimum standard of butter fat content for milk and prohibiting the sale of substandard milk.

City of Milwaukee v. *Childs Co.*, 195 Wis. 148, 217 N. W. 703 (1928), an ordinance prohibiting the sale of milk except in the original containers.

Pacific Coast Dairy v. *Police Court*, 214 Cal. 668, 8 Pac. 2d 140 (1932), a statute imposing a penalty for not returning milk containers marked with the registered brand of the owners.

City of Chicago v. *Bowman Dairy Co.*, 234 Ill. 294 (1908), an ordinance requiring milk bottles to contain a permanent indication of their capacity.

(b) Evidence in the record shows that the prohibition of paper containers for delivering milk is not unreasonable.

There is no need to labor the obvious point that the regulation of the distribution of fresh milk is a vital necessity, particularly in a city the size of Chicago. The production and distribution of 1,300,000 quarts of an easily contaminated liquid daily consumed in Chicago obviously give rise to special problems of regulation. And a peculiar

importance is attached to milk regulations by the fact that milk is the staple item in the diet of infants.

The master heard much evidence on the question of the validity of the ordinance as a reasonable exercise of the police power. More than twenty witnesses testified for the plaintiff (R. 132-940, R. 1243-1306) and nine witnesses testified for the defendants (R. 942-1242). Approximately 120 exhibits were admitted in evidence (R. 1397-1708). There was admittedly testimony by some of the plaintiff's witnesses that the plaintiff's containers are sufficiently sanitary to permit their use for delivering milk. On the other hand, the testimony of the plaintiff's own witnesses revealed that paper containers have characteristics that create serious public health problems.

This is apparent from the master's report. After reciting the facts about the manufacture, processing, and filling of paper containers (R. 1718-22), the master found (R. 1723) that a legislative body might reasonably conclude that contamination might occur at one or more of the many stages from the pulp to the sealed container through carelessness, desire to save expense, inadequate facilities, or other reason. The master then discussed the evidence and made findings about the following matters: absorbency of paper containers (R. 1723-24), paraffin particles in the milk (R. 1724), odors from paraffin or bacteria (R. 1724-26), effective sanitary control of paper containers (R. 1726-29), non-transparency of paper containers and non-rising of cream to the top of containers (R. 1729-30). The master continued with the following general finding:

> "I find that there is evidence in the record, from plaintiff's own witnesses, independent of the corroborative testimony of Dr. Arnold, the City's witness, from which the City Council could reasonably have concluded that prohibition of paper containers was neces-

sary and appropriate to protect the purity and wholesomeness of milk, or, to state the proposition another way, it is at least doubtful whether plaintiff has proved that there is not sufficient evidence tending to establish a reasonable basis for such conclusion." (R. 1734).

The master then made specific findings of fact (R. 1734-35):

"I find, that the legislative body may reasonably have based its decision on evidence tending to prove the following:

"There are steps in the manufacture, conversion and filling of paper containers in which bacteria may get into the walls of the containers.

"Paper containers, even when paraffined, are to some extent absorbent and the milk may absorb such bacteria.

"Sanitary conditions differ from one paper mill to another and even in the same mill from time to time.

"The sanitary condition of the mill is a significant factor as to the condition of the finished container.

"The sanitary condition of the paper board blank determines the sanitary condition of the finished container.

"Particles of paraffin get into the milk and constitute a foreign substance which preferably should not be in milk, especially for babies.

"Odors from paraffin, whether the paraffin is fresh or not, may get into the milk.

"If the paper board contains a high amount of bacteria, there may exude objectionable odors which may get into the milk.

"The control and precautions by paper manufacturers themselves may not be adequate.

"In the case of glass milk bottles, the City has the cleaning process at hand locally and can exercise complete control; in the case of paper containers, inspection at remote places may be necessary but impractical or too expensive.

"Some paper containers have been shown to contain high bacterial counts.

"Paper containers are not transparent as glass bottles, so that it is difficult to observe the quality of the

milk or whether the milk contains dirt or other foreign body.

"Cream does not rise to the top in paper containers, so that purchasers may not readily know whether they are getting milk of the required fat content.

"The United States Public Health Service Sanitation Board in June 1939 criticized paper containers on account of their absorbency and the sloughing off of paraffin."

The master concluded that the court must hold the ordinance valid and the prohibition of paper containers reasonable, and recommended that the court should not issue the injunction or render the declaratory judgment requested. (R. 1735-36.)

The majority opinion of the Circuit Court of Appeals said of the evidence about the reasonableness of the ordinance: *"It is true the record discloses some evidence in support of defendants' contention that the use of such containers presents a hazard to health"* (R. 1794). Without more this evidence would seem to be enough, under the applicable principles of law discussed above, to show that a court would be interfering with the legislative discretion of the Chicago City Council in holding that the ordinance was unreasonable in forbidding the use of paper milk containers. This was the view of the dissenting judge who stated:

"The master found upon substantial evidence a number of facts bearing upon the undesirability of the use of paper milk bottles, showing clearly that at least the question of desirability of their use is debatable. In such case the city council is entitled to exercise its own administrative and legislative judgment,—a judgment not to be superseded by verdict of a jury or decision of a court." (Citing cases.) (R. 1796.)

But the majority opinion of the Circuit Court of Appeals and the opinion of the trial court both indicated that their

authors believed that other factors in the case outweighed the evidence showing possible health hazards in the use of paper milk containers. We turn to a discussion of these other factors to show that they are not controlling here.

Presumption of validity of ordinance.

The cases cited above show in clear language that whoever attacks the validity of legislation has the burden of establishing its validity and that there is a strong presumption that legislation enacted under the police power is valid. The majority opinion of the Circuit Court of Appeals says that here the presumption "could be little more than a shadow" since the use of paper milk containers was in its incipient stage when the ordinance was enacted in 1935 so that the legislative body "could not, from the nature of things, have considered and weighed their advantages and disadvantages" (R. 1794). We submit that this ruling is not sound constitutional law.

The defendants have never taken the position in this case that the reasonableness of the ordinance must be determined as of the time of its passage in 1935, for it is admitted that a law valid when passed may become invalid thereafter by reason of a change of conditions. This is pointed out in the opinion of the Circuit Court of Appeals (R. 1789). But certainly this does not mean that there is no presumption of the validity of legislation that is attacked on the ground that it became unreasonable after its enactment. Since the question of reasonableness is determined in the light of conditions existing today, we are not concerned here with what the City Council actually did consider before it enacted the ordinance, but with what it might reasonably have considered assuming conditions to have been as they are today or, rather, with what it

might reasonably consider today in the light of today's conditions. For this reason the presumption of validity is just as strong as if the ordinance had been passed today or as if today's conditions existed when the ordinance was passed.

The holding of the Circuit Court of Appeals would give courts a much greater latitude in invalidating legislation which affects conditions that come into existence after its enactment. The presumption of validity arises upon the enactment of the legislation. Obviously the strength of the presumption is not impaired by advancing age.

Use of paper milk containers elsewhere.

There is much evidence in the record about the use of paper containers for distributing milk in municipalities other than Chicago. The trial judge in his opinion placed much reliance on this evidence, as well as on the absence of evidence tracing "serious disease or minor ailment" to the use of paper containers (R. 1753). Likewise the majority opinion of the Circuit Court of Appeals emphasized that the use of paper containers "has been authorized and permitted by more than 200 cities and villages in the United States, including such cities as Washington, D. C., New York and Philadelphia, as well as practically all of the cities and villages near and adjacent to the City of Chicago" (R. 1794).

These factors have no bearing on the validity of the Chicago ordinance under the cases cited above. At the hearing before the master the defendants objected (R. 148) to the introduction of evidence of the use of paper milk containers in other municipalities if this evidence was to be considered on the question of the reasonableness

of the ordinance. Obviously the use of the containers elsewhere has no factual bearing on the case unless accompanied by evidence that municipalities not prohibiting them considered carefully the public health hazards involved. As shown below, the slight evidence in the record about the precautions taken in a few municipalities shows that the precautions were very inadequate.

The question of the reasonableness of the ordinance must be determined by the evidence about the sanitary qualities of the paper container and not by a roll call that arrays on one side the municipalities not prohibiting its use and on the other side the municipalities prohibiting its use. Obviously evidence of permission in one municipality or state cannot affect the validity of a prohibition in another municipality or state. The fact, for example, that Chicago may permit automobiles bearing loud speakers to tour the streets would afford no basis for an attack upon an ordinance of New York City prohibiting the use of those devices in congested areas. So the fact that other states did not limit the weight of motor trucks using their highways would not affect the validity of the Texas statute prescribing limitations of weight, *Sproles* v. *Binford*, 286 U. S. 374 (1931). The fact that Illinois has not seen fit to require compulsory vaccination could not affect the validity of a Massachusetts statute requiring compulsory vaccination, *Jacobson* v. *Massachusetts*, 197 U. S. 11 (1904). Oregon's regulations concerning fruit containers are not invalid because they prohibit the use of containers permitted elsewhere, *Pacific States Box and Basket Co.* v. *White*, 296 U. S. 176 (1935). Instances could readily be multiplied.

Also, the ordinance may not be held unreasonable because no instance of contagion or death resulting from the use of paper containers has been proved by the defendants.

The exercise of police power for the protection of the public health is not conditioned upon the prior occurrence of disease and death. A future hazard is as strong a justification for the exercise of the power as is a prior disaster. An antecedent outbreak of amoebic dysentery, for example, is not an essential condition to the exercise of the city's power to eliminate sources of danger in plumbing systems. So here, the city's power to protect itself from hazards to public health which it believes are inherent in the use of plaintiff's containers exists regardless of whether or not their use elsewhere has resulted in disaster. The plaintiff's witness, Packer, testified in his deposition that it was impossible to trace cases of contagion to a single service container (R. 1374-5). As a result the lack of evidence of specific cases of illness attributable to the use of these containers is in fact of no significance. See *Jacobson* v. *Massachusetts*, 197 U. S. 11 (1904), where the court rejected proof that vaccination was ineffective to prevent disease; and *Purity Extract Co.* v. *Lynch*, 226 U. S. 192 (1912), where a statute forbidding the sale of "malt liquors" was held to apply validly to a non-intoxicating malt liquor.

From the testimony of the plaintiff's witness, Packer, it is also apparent that the consumers of milk have been used in many municipalities as experimental media for the determination of the sanitary quality of paper containers. Packer testified in substance (R. 1368-9) that regulations governing the handling of paper containers are necessary; that no regulations exist in the City of Philadelphia, although regulations were being formulated at the time of the taking of his deposition. He further testified that regulations were as necessary in 1929 when the use of paper containers was first permitted in Philadelphia as they are now, but that regulations were not then formulated because

nobody knew what the regulations ought to be—"somebody had to pioneer" (R. 1370).

The principal witness for the plaintiff, Dr. John R. Sanborn, testified that in his opinion, in the interest of public health, standards should be formulated and adopted by public health authorities governing the production of paper board for use in paper milk containers and governing also the subsequent processing and handling of the paper board until the container is filled with milk. He further testified that he had attempted to ascertain what cities had adopted regulations with respect to paper containers and that so far as he knew no cities other than Baltimore, Maryland and Reading, Pennsylvania had adopted any regulations. In his opinion neither the Baltimore nor the Reading regulations were satisfactory (R. 244-7).

In this state of the record the fact that paper containers are used for the distribution of milk in some municipalities other than Chicago proves nothing with respect to the unreasonableness of prohibiting paper milk containers in Chicago.

Reliance upon experience elsewhere, as that of the trial judge and the Circuit Court of Appeals in this case, was rejected in *Standard Oil Company* v. *City of Marysville*, 279 U. S. 582 (1928), which involved an ordinance requiring the storage of gasoline below ground. The court said (p. 586):

> "The facts that the tanks of petitioners within the city limits have been operated successfully above ground; that appliances used by them are of the best type; that fires in connection with their many tanks located elsewhere have been relatively infrequent, and numerous others found by the master, were properly for the consideration of the city council in determining whether the ordinance should be enacted, but they fall far short of withdrawing the subject from legislative determination or establishing that the decision made was arbitrary or unreasonable. * * *

"We may not test in the balances of judicial review the weight and sufficiency of the facts to sustain the conclusion of the legislative body, nor may we set aside the ordinance because compliance with it is burdensome. * * *"

Regulation of paper milk containers by the State of Illinois.

Another factor noted by the majority opinion of the Circuit Court of Appeals is that "the legislature of the State of Illinois and its Department of Health have approved the use of such containers since 1939" (R. 1794). As we have pointed out in Point I of this brief, the State of Illinois in regulating paper milk containers provided expressly in the 1939 statute that cities could regulate further. Also, the recognition of the use of paper milk containers by the state is merely another instance of their use elsewhere. This factor, as we have just explained, is immaterial in fact and in law.

Regulation of paper milk containers in model ordinance of United States Public Health Service.

Another element emphasized by the majority opinion of the Circuit Court of Appeals is "the fact that the United States Public Health Service, whose model ordinance has been widely adopted by cities throughout the United States, including the City of Chicago, amended its ordinance in 1939, so as to include the regulation of single-service containers" (R. 1794).

We note briefly the facts involved. The United States Public Health Service, which performs advisory functions only as to municipal milk regulations (R. 609), has prepared a model ordinance and code of regulations, both of which the City of Chicago follows substantially (R. 1065). While this case was pending before the master, section 10 of the Health Service's model ordinance was amended

to provide that milk may be delivered in single-service containers (defendants' exhibit 17, R. 980, R. 1678-79). At the time when this amendment was made, the Health Service also added provisions to its model code of regulations providing for the regulation of single-service containers. Included in the regulations* recommended were the following:

> "(5) The manufacture, packing, transportation and handling of single-service containers and container caps and covers are conducted in accordance with the following requirements. *Inspections required herein may be made by the health officer or by any agency authorized* by him. * * *
>
> "(c) All operations at the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13p, 14p, and 15p" (R. 1590-1; italics added).

These regulations require public health officials to inspect the paper mills and converting or fabrication plants in which the various processes in the manufacture of paper milk containers take place. The regulations say that the inspections may be made "by the health officer or by any agency authorized by him". The paper mills and converting plants where paper containers are made are located in various parts of the country—e.g., at the time of the trial the paper in the plaintiff's container was made in the West Virginia mill of the Cherry River Paper Company (R. 164) and the paper was converted into the containers by another manufacturer at Middleton, Ohio (R. 198). The inspection of the manufacturing of the plaintiff's container would thus require Chicago health officials to travel to West Virginia

* The Model Code of Regulations of the United States Public Health Service also contained a statement about the characteristics of paper milk containers which shows that their prohibition is not unreasonable:

> "The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a non-absorbent non-flaking surface" (plaintiff's exhibit 61, R. 1591).

and Ohio; and there are other types of containers for which the paper is made and fabricated in many other states (see map, R. 1479). Also there is no "agency authorized" by health officers to inspect paper mills and fabrication plants (Prucha, R. 1734).

In contrast with the expensive devices suggested by the regulations of the Health Service for the supervision of paper milk containers, the sanitary quality of the glass containers which the Chicago ordinance requires may be supervised locally. Since the glass container can be effectively sterilized at the dairy when it is being filled with milk (Sanborn, R. 169), there is no need to inspect any aspect of the glass container before the cleaning process at the dairy. Not only are glass containers absolutely sterile when manufactured (R. 169), they receive bactericidal treatment before each use and with the best method of sterilization it is possible to obtain a sterile glass bottle "according to bacteriological tests" (R. 170). The bactericidal treatment at the local dairy can be thoroughly inspected and controlled locally. In Chicago this control consists of regular inspections of the cleaning process, including the operation of the washing equipment, the temperatures of the solutions used, the bottling equipment, etc. (R. 970-72). Also occasional tests are made locally of the bacterial content of sample bottles (R. 972).

Instead of permitting the use of paper milk containers, the proper regulation of which requires inspection of manufacturing processes at far-distant places, the Chicago City Council requires the use of glass containers which may be (and are) inspected locally. This is not an unreasonable legislative determination, even though the model ordinance of the United States Public Health Service permits both glass and paper milk containers.

Use of paper containers for other purposes.

In holding that the ordinance was void if it forbade the use of paper milk containers, the trial judge placed great reliance on evidence about other uses of paper containers in Chicago (opinion, R. 1752). Of one type of container; the opinion states that it is less meritorious in structure and design than plaintiff's and is in daily use in Chicago for the sale of milk, chocolate milk, ice cream, and other liquids by drug stores, hotels, restaurants, and soda fountains.* The other type, the opinion says, is in common use for cheese, butter, meat, drinks, and other edibles.

The record shows that the use of paper containers for purposes other than the delivery of fresh milk does not make the prohibition of the use of paper milk containers unreasonable or discriminatory. The defendants introduced evidence showing that the characteristics of the other commodities sold in paper containers are such that from a public health point of view they are in nowise comparable to milk (R. 1094-95, R. 1171-73). This fact is also established in the record by the statement of the plaintiff's leading witness, Dr. John R. Sanborn:

> "... *milk is the most perishable and easily contaminated food that is placed in paper containers* ..." (R. 1495).

---

* The trial court did not point out that the sale in paper containers of such of these commodities as are milk products is forbidden by the Chicago Board of Health. The only evidence of the sale of milk in paper containers was testimony that attorneys employed by the plaintiff went to several drug stores and restaurants in Chicago and purchased milk in paper tumblers (R. 857-62, 891, 897). The clerks in these stores were violating a regulation of the Board of Health providing, "All milk and milk products shall be sold, served, or dispensed to the final consumer only in unopened, original containers as received from the distributor" (defendants' exhibit 26, R. 1697). Obviously a violation of this regulation does not show that there are no health hazards in the use of paper milk containers.

Proposal by Chicago Board of Health that City Council permit use of paper milk containers.

The majority opinion of the Circuit Court of Appeals emphasizes the fact that the Chicago Board of Health recommended to the Chicago City Council that the ordinance be changed in accordance with the amendment to the model ordinance of the United States Public Health Service. The proposal was made on October 16, 1939 while this case was being heard by the master. In making its recommendation for the change in the ordinance, the Chicago Board of Health also recommended that the regulations of the United States Public Health Service be adopted (R. 1698-99). As we have noted, the regulations of the Health Service require health officials to inspect paper milk containers while in the process of manufacture and this inspection must be made in far-distant places. Clearly it is not unreasonable on the part of the Chicago City Council to disregard the recommendation of the Board of Health that paper milk containers be permitted when the regulations of the containers recommended by the Board would require the local health officers to make expensive inspection trips to the paper mills and converting plants.

* * * * * *

We submit that the factors considered by the trial court and the majority of the judges of the Circuit Court of Appeals to prove the ordinance to be unreasonable are not determinative of the question of the validity of the ordinance under the fourteenth amendment. Unless the wisdom and propriety of the ordinance are to be determined by the courts, the controlling factor is what was admitted in the majority opinion of the Circuit Court of Appeals: "the record discloses some evidence . . . that the use of such

containers presents a hazard to health" (R. 1794). In view of the findings of the master and this admission by the Circuit Court of Appeals, we have not discussed in detail the evidence showing these hazards, but we call particular attention to the master's discussion of the evidence about the characteristics of paper milk containers (R. 1718-29).

The prohibition of the use of paper milk containers may be held unreasonable only if it is "so unrelated in any way to any possible danger to public health that the enactment must be considered as a merely arbitrary interference with the property and liberty of the citizens" [*People* v. *Quality Provision Co.*, 367 Ill. 610, 614 (1938), quoting from Mr. Justice Hughes in *Price* v. *Illinois*, 238 U. S. 446, 451-452 (1915)]. The evidence shows that the ordinance is not unreasonable. The holding of the trial court and the pronouncement of the Circuit Court of Appeals that the ordinance is unreasonable were based on an erroneous conception of the applicable principles of constitutional law.

CONCLUSION.

The defendants (petitioners) respectfully urge this court to review and reverse the judgment of the Circuit Court of Appeals.

CITY OF CHICAGO, *a Municipal Corporation,*
BOARD OF HEALTH OF THE CITY OF CHICAGO,
DR. ROBERT A. BLACK, *Health Commissioner and Acting President of Board of Health of the City of Chicago,*
Petitioners,

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

REPLY BY PETITIONERS TO RESPONDENT'S BRIEF IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI.

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Reply to Plaintiff's Preliminary Statement.

The plaintiff says (p. 5) that the decision by the Circuit Court of Appeals is "of local interest only and does not present a question of such importance as justifies the awarding of the writ of certiorari." It would seem that any decision by a federal court which cuts down the powers of a municipality as large as the City of Chicago to regulate the public health is extremely important; and, as noted in the defendants' original brief (pp. 35-36), this par-

ticular decision affects the regulatory powers of all Illinois municipalities.

The plaintiff says (p. 5): "No conflict with Illinois decisions is shown, and in fact none exists." This is not true. The decision conflicts not only with settled rules of statutory construction stated in Illinois decisions but with the holding in *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939); see defendants' brief, pp. 30-33. It also conflicts with the plain language of the saving clause of the 1939 statute cited and discussed in the defendants' brief (pp. 24-28). There is not a single Illinois decision which supports the decision of the Circuit Court of Appeals; none of the cases relied on by the Circuit Court of Appeals or by the plaintiff in its brief contained a saving clause as did the 1939 statute involved here.

It is said (plaintiff's brief, p. 5) that if the opinion of the Circuit Court of Appeals was wrong in interpreting the statute, "the Illinois legislature can correct it." The defendants' contention is that the lower court has disregarded the plain language used by the Illinois legislature. In so doing it applied a rule of law that has no application here in view of the statutory language. The effect of the decision is thus to enunciate a new principle of the law of municipal corporations, the principle being that, no matter how extensive the legislative grant of municipal power may be, the municipality may not forbid what the state acting through the legislature does not forbid. It is difficult to see how the legislature could have been any more emphatic than when it said, "Nothing in this act shall impair or abridge the power" of cities to regulate the distribution of milk. The situation created by the Circuit Court of Appeals in disregarding this language is one that can be effectively corrected only by a court of review.

Reply to Plaintiff's Point I.

The plaintiff says (p. 7) that "the *defendants* submitted in the trial court and in the Circuit Court of Appeals the question" of whether or not the 1939 statute deprived the city of power to forbid the use of paper milk containers. It seems likely that the word "defendants" is used inadvertently for the word "plaintiff," although the record does not show clearly how the question was first raised. The plaintiff complains that the defendants now contend for the first time that the courts below should not have decided the question.

The question of the city's power under the 1939 statute was not raised in the complaint, for when the complaint was filed in February, 1939 the 1939 statute had not become effective. The only indication in the record about how the question was first raised is the statement in the master's report (R. 1732) that the "plaintiff refers" to the statute. The master disposed of the point with one sentence. Similarly the opinion of the trial court discussed the point in only one sentence (R. 1756). The findings of fact, the conclusions of law, and the decree of the trial court (R. 1756-1761) do not find or decide that the ordinance is in conflict with the 1939 statute, but merely say that the plaintiff's containers conform with the provisions of the statute. The Circuit Court of Appeals then based its decision against the defendants on a holding that the city's power was impaired by the 1939 statute, although the two majority judges also indicated that they considered the ordinance unconstitutional. The substantial questions raised by the pleadings in this case were the construction of the ordinance as including or excluding paper milk containers and the validity of the ordinance as a reasonable exercise

of the police power. The new issue as to the city's power under the 1939 statute emerged as a substantial question for the first time in the majority opinion of the Circuit Court of Appeals. For this reason the application of the rule announced in *Railroad Commission of Texas* v. *Pullman Company*, 312 U. S. 496 (1941), has not been urged before. Nevertheless the defendants urge this court to review and decide on the merits the local question of the city's power (see brief, pp. 36-38).

The plaintiff says (brief, pp. 7-9) that the *Pullman Company* case is "not authority in the present proceeding" because there the Texas statute provided for a statutory method of appeal from the administrative order attacked in the federal courts. The only importance of that factor in the case was that, unlike some administrative orders, the order was appealable under the state statute. So here, if the plaintiff had filed its suit in an Illinois state court of first instance and had been unsuccessful, it could have appealed to Illinois courts of review under section 74 of the Illinois Civil Practice Act (Ill. Rev. Stat. 1941, ch. 110, sec. 198). Moreover, the *Pullman Company* case is merely one of a number of decisions applying the principle stated in the opinion by Mr. Justice Frankfurter:

> "Few public interests have a higher claim upon the discretion of a federal chancellor than the avoidance of needless friction with state policies, whether the policy relates to the enforcement of the criminal law, . . . or the final authority of a state court to interpret doubtful regulatory laws of the state . . ."

This principle, clearly applicable here, was applied in *Hawks* v. *Hamill*, 288 U. S. 52 (1933), cited in the defendants' brief (pp. 36, 38) and not mentioned in the plaintiff's brief.

Reply to Plaintiff's Point II.

Outstanding is the fact that the plaintiff does not deny that the holding of the lower court means that the city's power under the 1939 statute is less than it was before. The holding means that the city's power *was* impaired by the statute, although the saving clause in section 19 of the statute says expressly, "*Nothing in this act shall impair or abridge the power of any city . . . to regulate . . . the . . . distribution of . . . milk . . .*". Moreover:

(a) The plaintiff does not deny that the broad power of the city to regulate the milk industry under the Cities and Villages Act of 1872 included the power to forbid the use of paper milk containers (see defendants' brief, pp. 20-24).

(b) The plaintiff does not discuss the meaning of the particular words in the saving clause. These words state emphatically and unmistakably that the power of the city under the 1939 statute is the same as it was under the 1872 statute (except for the inapplicable proviso). See defendants' brief, pp. 26-27.

(c) The plaintiff does not answer the defendants' contention (pp. 24-25) that, since the saving clause and the title of the statute are in identical terms, the saving clause is as broad as language could make it and, whatever aspect of the milk industry is regulated by the statute, the legislature has said expressly that the city retains its power to regulate.

(d) The plaintiff does not answer the defendants' contention (brief, pp. 25-26) that the proviso in the saving clause evidences a legislative intention that only matters within the proviso are excepted from the broad operation of the saving clause under the rule, *expressio unius est exclusio alterius*, and consequently the power to forbid the use of paper milk containers is retained.

(e) The plaintiff does not answer the defendants' contention (brief, pp. 29-30) that the Circuit Court of Appeals found that the ordinance conflicts, not with the entire statute, but with a part of it; and that the

court's reasoning was basically fallacious in considering the effect of a part of the statute on the city's power *before* it considered the meaning of the clause that preserves the city's power. In fact the plaintiff commits the same error: *before* considering the meaning of the saving clause (plaintiff's brief, pp. 31-41), the plaintiff (brief, pp. 13-31) argues and concludes that the ordinance conflicts with the statute. There is no conflict between the ordinance and the statute when the statute is considered as a whole.

The plaintiff (p. 13) attempts to discredit the pertinency here of *Koy* v. *City of Chicago*, 263 Ill. 122 (1914). The holding in that case, as that of the Circuit Court of Appeals here, had far-reaching effects in that it showed the extent (there held broad) of the power of cities to regulate the milk industry. The *Koy* case was so described by the Circuit Court of Appeals in its opinion (R. 1792), where it speaks of "the broad field of regulation which it (the city) had theretofore had as recognized in *Koy* v. *City of Chicago*, 263 Ill. 122."

Similarly *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939), is of vital importance here as indicating the attitude of Illinois courts in construing legislative grants of municipal power. The plaintiff says that the opinion is completely devoid of language which "by any stretch of the imagination" could be construed to bear on the issues in the present case. There, as here, the City of Ottawa had a power to regulate under the 1872 Cities and Villages Act. There, as here, the state began to regulate. There, as here, the statute contained a saving clause. And there, as should have been held here, the Illinois Supreme Court held that the pre-existing power of the city was retained by the saving clause, although the same claims of conflict between city and state regulation could be made as are made here.

City of Rockford v. *Hey*, 366 Ill. 526 (1937), discussed at some length by the plaintiff (brief, pp. 14-15, 29-31), was neither relied on or cited by the Circuit Court of Appeals. It has no bearing here. The case held invalid an ordinance that required ice cream makers to pay a license fee to the City of Rockford for inspection of their factories *in other cities*. Here the plaintiff was not refused a permit to sell milk in Chicago because its plant outside of Chicago does not comply with Chicago regulations, but because the plaintiff seeks to sell milk in Chicago in a manner forbidden by the ordinance. Here the ordinance reads, ". . . milk sold in quantities of less than one gallon shall be delivered in standard milk bottles" and operates only within the city.

The plaintiff says that the constitutional question is not involved at this stage of the litigation and denies (brief, p. 15) that the opinion of the Circuit Court of Appeals contains a dictum that the ordinance is an unreasonable exercise of the police power. The discussion in the majority opinion (R. 1794) of a number of matters that relate only to the constitutionality of the ordinance clearly amounts to a dictum that the ordinance is an unreasonable exercise of the police power. These statements about such a delicate question as the validity of a health regulation under the fourteenth amendment constitute a precedent of far-reaching effect on the power of courts to invalidate health regulations under the fourteenth amendment and would alone seem to be a sufficient ground to require this court to exercise its power of review.

Moreover, the plaintiff makes many statements that can be addressed only to the question of the unreasonableness of the ordinance. The plaintiff speaks of the fitness of paper milk containers for the "prevention of disease" and of "their other benefits" (brief, p. 6) and argues that the

use of paper milk containers in Chicago since the entry of the injunction in the trial court indicates that they do not present a hazard to health (brief, pp. 6, 13; obviously this fact is not shown in the record). Also the plaintiff speaks of the "injustice" of permitting the city to forbid the use of paper containers, saying that "the *supposed* judgment of fifty aldermen" (italics are the plaintiff's) is aligned against the Chicago Board of Health, the Illinois General Assembly, the Director of the Illinois Department of Health, and the United States Public Health Service (plaintiff's brief, p. 43). For a complete answer to the plaintiff's statement, see the defendants' brief (pp. 49-57).

The plaintiff (pp. 22-28) cites many Illinois cases in which the rule was applied that an ordinance is invalid when it conflicts with a state statute or a public policy expressed in a state statute. This is a rule of statutory construction only, as is apparent from the cases cited. In not one of these cases did the statute involved contain an operative saving clause retaining unimpaired the powers of municipalities, as does section 19 of the 1939 Milk Pasteurization Act.

In view of the broad language of the saving clause it is immaterial whether the ordinance and the 1939 statute conflict. In fact, however, they do not conflict. The plaintiff discusses the statute at length (brief, pp. 17-21, 41-43) in an attempt to establish a conflict. The sections of the statute and the regulations of the Department of Health merely contain some provisions *about* paper milk containers. They do not say that paper milk containers must be permitted, but merely recognize and regulate their use. The plaintiff's statement (pp. 42-43) that the State of Illinois "makes it illegal" for the plaintiff to sell milk in any way but in paper containers is clearly wrong.

It may be that the plaintiff has no equipment to package milk in glass containers and that the state regulations would forbid the use of paper-container equipment for filling glass containers. But the state does not prevent the plaintiff from using other equipment to fill glass containers nor from selling milk in glass containers.

In discussing the rule that the statute controls where there is a conflict between a statute and an ordinance, the plaintiff, as did the Circuit Court of Appeals (R. 1791), quotes from 2 McQuillin on Municipal Corporations (2d Ed. 1928) 572, but does not quote the entire sentence. The word "established" at the end of the plaintiff's quotation (p. 25) is not followed by a period but by a comma and, after saying that an ordinance may not be contrary to a public policy expressed in legislation, the text continues with the following words:

> "unless there is a specific, positive, lawful grant of power by the state to the municipality to ordain otherwise, in which event the specific, positive, lawful grant is from the same source of authority that made and has been expressed through legislation the policy of the state."

This important clause not only shows that the problem is one of statutory construction, but applies expressly to the "specific, positive, lawful grant" of power to the city in the saving clause.

The plaintiff also quotes (p. 25) from 43 Corpus Juris 215-17, section 219, which states the general rule about conflicting ordinances and statutes. A more specific discussion in section 220 (pp. 218-220) shows that there is no conflict in the present case:

> "The rule that a municipal ordinance in conflict with a state law is void does not apply unless the state law with which the particular ordinance conflicts is

intended to apply, and is, in fact, applicable and imperative in the particular municipal corporation in which such ordinance has been enacted" (43 Corpus Juris 219).

"The fact that an ordinance enlarges upon the provisions of a statute by requiring more than the statute requires creates no conflict therewith, unless the statute limits the requirement for all cases to its own prescriptions" (43 Corpus Juris 219-220).

In several places, in discussing the saving clause, the plaintiff says that it means that the powers of the City of Chicago are unimpaired "except to the extent that the State by and pursuant to the 1939 milk act occupies the field of milk regulation" (brief, p. 33; see also p. 39). This statement conflicts even with the interpretation of the saving clause in the majority opinion of the Circuit Court of Appeals, which said:

"The purpose of the saving clause, in our judgment, was to preserve in the city the unquestioned right to continue *in a field which had been entered by the state, and in which, thereafter, each should have co-extensive power and authority.*". (Italics added.)

The plaintiff also says (p. 32):

"The statute cannot be construed to mean (and we do not understand the defendants to so contend) that specific matters shall be subject to determination by both the state and by the city and at one and the same time. That would mean chaos, . . ."

What the plaintiff means by "subject to determination" is not clear. Certainly it is competent for the legislature to provide that state health officers and municipal health officers may regulate the same specific matters at the same time. This would not mean "chaos." In many jurisdictions there are constitutional and statutory provisions that expressly give municipalities local home rule over many matters that are regulated by the state. In fact, section 19

of the 1939 Milk Pasteurization Act merely preserves the "home rule" provisions as to milk regulations contained in the 1872 Cities and Villages Act.

The only answer made by the plaintiff to the defendants' analysis of the saving clause is an argument (brief, pp. 36-39) that the defendants' construction of the saving clause means that the statute "is applicable only to rural areas and other small communities" and has only "a limited territorial application"; and the plaintiff then argues that such a construction is untenable. The plaintiff does not correctly state the defendants' contention. The defendants' contention is that the statute is designed to prescribe minimum sanitary standards which are effective throughout the state, both in rural and urban communities. But the statute indicates no intention to go further and occupy exclusively the entire field of regulation. On the contrary, the saving clause says expressly that municipalities may continue to make regulations as broad in scope and as stringent as those authorized under the 1872 statute, so long as the municipal regulations do not fall below the minimum standards fixed by the state. In other words, the statute places a floor under municipal milk regulations.

Conclusion.

This case presents a simple problem. The 1872 statute gave the city power to forbid the use of paper milk containers. The 1939 statute said expressly that nothing therein impairs the power of cities. The words in the saving clause can mean only what they say and the city still has power to forbid the use of paper milk containers. The Circuit Court of Appeals holds that the saving clause is meaningless, as the dissenting opinion points out. This

error and the importance of the case to Illinois municipalities call for the exercise of this court's power of review.

Respectfully submitted,

CITY OF CHICAGO, a Municipal Corporation,
BOARD OF HEALTH OF THE CITY OF CHICAGO,
DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

BRIEF OF PETITIONERS.

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IN THE

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Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

BRIEF OF PETITIONERS.

Opinions of the Courts Below.

The majority and dissenting opinions of the Circuit Court of Appeals (R. 1782-1796) are reported in 122 F. 2d. 132 (1941); the opinion of the District Court (R. 1752-1756) is reported in 35 F. Supp. 451 (1940).

Statement of Jurisdiction.

(a) The jurisdiction of this court is invoked under section 240 of the Judicial Code as amended by the act of

February 3, 1925 [28 U. S. C. 347, par. (a)]. The pertinent languange of the section is as follows:

> "(a) In any case . . . in a circuit court of appeals, . . . it shall be competent for the Supreme Court of the United States . . . to require by certiorari, *either before or after a judgment or decree by such lower court*, that the cause be certified to the Supreme Court for determination by it, and with like effect, as if the cause had been brought there by unrestricted appeal." (Italics added.)

In a sense the judgment of the Circuit Court of Appeals may not be a final judgment, since it reversed and remanded the cause for the purpose of modifying the decree entered by the trial court to conform with the views expressed in the opinion. But the Circuit Court of Appeals made a final determination that the ordinance involved is invalid and the formal modification of the decree is all that remains to be done in the trial court. This alone is enough to permit the Supreme Court to review the cause by writ of certiorari, particularly since the judgment need not be final in the technical sense. This is evident from the language of the section quoted above. And see *Fuller* v. *Otis Elevator Company*, 245 U. S. 489 (1917), where the fact that the judgment was not final was held to be no objection to the granting of the writ.

(b) The judgment of the Circuit Court of Appeals was entered on August 4, 1941 (R. 1797).

Statement of the Case.

The case involves a provision in the milk ordinance of the City of Chicago requiring milk to be delivered in "standard milk bottles."* The Circuit Court of Appeals

* The provision is contained in the third sentence of section 3094 of the ordinance: "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; . . ." (R. 108).

for the Seventh Circuit has held that this provision of the ordinance is void (R. 1794). A writ of certiorari has been granted to review the holding.

The respondent, Fieldcrest Dairies, Inc. (plaintiff in the trial court), a Michigan corporation incorporated in 1937 (R. 844, 1609-12), filed suit on February 2, 1939 against the petitioners (defendants) in the United States District Court for the Northern District of Illinois, Eastern Division. The respondent had sought a permit from the petitioner Board of Health to sell milk in "Pure-Pak" paper containers in Chicago; the permit had been denied. The complaint (R. 2-15) alleged that the respondent's containers are "sterile, sanitary, and made of non-absorbent material" and are "standard milk bottles" within the terms of the Chicago ordinance requiring milk to be delivered in "standard milk bottles." The action of the petitioners in refusing the permit to sell milk in Pure-Pak containers in Chicago was alleged to be discriminatory and unreasonable, to deprive the respondent of the equal protection of the laws, and to deprive the respondent of its property without due process of law, all in violation of the federal and Illinois constitutions. The complaint prayed (R. 14-15) for (1) a declaratory judgment finding either that the ordinance does not prohibit the respondent from selling milk products in Pure-Pak containers or that, if it does, the ordinance is unreasonable and unconstitutional; and for (2) an injunction restraining the petitioners from interfering with the respondent in selling milk products in Pure-Pak containers in the city. The petitioners filed an answer (R. 16-22) which denied that the respondent's containers are standard milk bottles, are non-absorbent or sterile, or are sanitary containers for the distribution of milk, and denied that the plaintiff is entitled to the relief sought. On motion of the respondent the case was referred

to a master in chancery (the Hon. Jacob I. Grossman) for hearing (R. 123).

While the case was being tried before the master, a new issue arose as to the power of the city to regulate the character of containers used for the distribution of milk within the city. Municipalities in Illinois had been given broad regulatory powers over the production, processing, and distribution of milk by certain provisions of the Illinois Cities and Villages Act of 1872 (Public Laws of Illinois, 1871-72, pp. 231-233, secs. 1, 50, 53, 66, 78), which had not been repealed in 1939 (Ill. Rev. Stat. 1939, ch. 24, secs. 65, 65.49, 65.52, 65.65, and 65.77).* On July 1, 1939, the so-called Milk Pasteurization Plant Act** went into effect (Laws of Illinois, 1939, pp. 660-666; Ill. Rev. Stat. 1941, ch. 56½, secs. 115-134). By this 1939 statute the Illinois General Assembly imposes regulations on the handling, processing, labeling, sale, and distribution of pasteurized milk, including a requirement that single-service (i.e. paper) milk containers be made and transported in a sanitary manner, and authorizes the Director of the Department of Public Health to promulgate minimum requirements for interpretation and enforcement of the act. Section 19 of the act contains a saving clause reading as follows:

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk, and pasteurized milk products, provided such regulation not permit any person to violate any of the provisions of this act." (Ill. Rev. Stat. 1941, ch 56½, sec. 133.)

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* In 1941 the provisions of the 1872 act were incorporated in a Revised Cities and Villages Act (Ill. Rev. Stat. 1941, ch. 24, secs. 23-1, 23-63, 23-64, 23-105, 23-81.

** The entire act is printed in this brief in *Appendix A*.

The respondent placed reliance on this statute in the presentation of the case to the master (see master's report, R. 1732).

The master heard many witnesses, who testified (R. 132-1396) about the manufacture of paper milk containers, their sanitary and insanitary characteristics, their use and regulation outside of Chicago, and the use of glass milk containers in Chicago. Many exhibits were admitted in evidence (R. 1397-1708). The master filed a comprehensive report (R. 1710-36), recommending the denial of the relief sought. His conclusions were that paper milk containers are not "standard milk bottles" and are forbidden by the Chicago ordinance; that the saving clause in the Milk Pasteurization Plant Act of 1939 preserved the pre-existing home rule of municipalities on the subject of the regulation of milk; and that the ordinance is valid. On the question of the reasonableness of the ordinance the master discussed the evidence in detail (R. 1718-13), made specific findings of fact (R. 1734-35), and found *from the testimony of the respondent's witnesses* that the sanitary characteristics of paper milk containers are such that the Chicago City Council may reasonably have decided that their prohibition was necessary to protect the purity and wholesomeness of milk (R. 1734).

[We do not state the facts about the sanitary aspects of the manufacture, processing, and filling of paper containers, because they are recited in detail in the master's report (R. 1718-22). A summary of the testimony of the principal witnesses is given in *Appendix C* in this brief. *Appendix B* is a glossary of technical terms used in the record.]

The trial judge (the Hon. Charles E. Woodward) sustained objections (R. 1738-49) to the master's report and

rendered a decree (R. 1759-61) in favor of the respondent. The decree contained a declaratory judgment that the respondent's paper milk containers are standard milk bottles. It also enjoined the petitioners from interfering with the sale and delivery by the respondent of milk in the City of Chicago in the respondent's Pure-Pak containers. The opinion of the trial court (R. 1752-56), while devoted chiefly to the proposition that the respondent's paper milk containers are standard milk bottles and are not forbidden by the ordinance, also stated that under the 1939 statute (the Milk Pasteurization Plant Act) the City of Chicago was "without power to prohibit the use of single-service containers if such containers conformed to the provisions of the statute." And the opinion stated that the ordinance would be void if it were construed to forbid the use of paper containers; by this the court meant, as indicated by its findings of fact (R. 1756-58), that the ordinance would be "unreasonable and discriminatory and without any reasonable basis" if it forbade the use of paper milk containers.

On appeal by the petitioners to the Circuit Court of Appeals, the opinion (R. 1782-94) was written by Major, Circuit Judge, joined in by Sparks, Circuit Judge, with Lindley, District Judge, dissenting in part (R. 1795-96). The Circuit Court of Appeals held (opinion, R. 1784-88) that the trial court erred in holding that the ordinance permitted the use of paper milk containers and approved the master's conclusion that the respondent's paper containers are not "standard milk bottles." Judge Lindley did not dissent from this portion of the opinion.

The majority opinion stated (R. 1790-93) that the ordinance was void because contrary to the public policy of the State of Illinois as expressed in the Milk Pasteuriza-

tion Plant Act of 1939. After pointing out that this statute permits the use of single-service containers and that the respondent had obtained a state certificate of approval of its pasteurization plant, the opinion said that the right thus conferred by the state was denied to it by the city ordinance. The opinion also said:

> ". . . the state, upon entering the field not only made provision for the sale and distribution of pasteurized milk but recognized, permitted and approved the use of such containers (single-service or paper milk containers), and the ordinance is squarely in conflict therewith." (R. 1793.)

As for the saving clause in the statute (sec. 19 quoted above), the majority opinion stated that it granted the city "the power to regulate paper containers . . . but we are unable to accept the theory that it has authority to outlaw that which the state has legalized." The majority opinion said also (R. 1794) that there was no occasion "to discuss at length or decide" other questions about the validity of the ordinance. Nevertheless the opinion continued with a brief discussion of factors in the case that were said to rebut the presumption of the validity of the ordinance when attacked on constitutional grounds. The majority opinion concluded that the plaintiff was entitled (a) to a declaratory judgment that the ordinance was void in prohibiting the use of the respondent's paper containers and (b) to an injunction "restraining the defendants from prohibiting, but not from regulating, the use of such containers" (R. 1794).

In his dissenting opinion Judge Lindley (R. 1795-96) stated that the ordinance should be sustained, that he was unable to agree that the ordinance violated the public policy of the State of Illinois as expressed in the 1939 statute. He said that the language of the saving clause "was

not meaningless or surplusage as announced in the majority opinion, but rather in the nature of a declaratory clause maintaining the existing status . . . to assure municipalities that their power to act in the premises was not taken away . . .".

Pursuant to the majority opinion a judgment was entered by the Circuit Court of Appeals, reversing the cause and remanding it for the sole purpose of modifying the decree to conform with the views expressed in the opinion (R. 1797). It requires modifications in the decree of the trial court as follows: while the decree contained a declaratory judgment that the respondent's paper containers are standard milk bottles and are permitted by the Chicago ordinance, the modified declaration will be that the ordinance is invalid in prohibiting the use of the respondent's containers; and while the decree enjoined the petitioners "from in any manner or by any means preventing or in anywise interfering" with the sale and delivery of milk by the respondent in its paper milk containers, the injunction ordered by the Circuit Court of Appeals will restrain the peitioners from prohibiting, but not from regulating, the use of the respondent's containers.

There are thus two questions presented.

(1) The holding of the Circuit Court of Appeals that the City of Chicago did not have power to enact the ordinance forbidding the use of paper milk containers involves the construction of grants of regulatory powers made by the Illinois state legislature to the City of Chicago. The question is: did the Illinois Pasteurization Plant Act of 1939 withdraw from the City of Chicago the power to enact the ordinance granted to the city by the Illinois Cities and Villages Act of 1872?

(2) The complaint alleged (R. 11) that the ordinance deprived the respondent of the equal protection of the laws and of its property without due process of law in violation of both the federal constitution (fourteenth amendment) and the Illinois constitution (sections 2 and 13 of article 2). The trial court found that the ordinance would be unreasonable and discriminatory if it forbade the use of paper milk containers. It was not necessary for the Circuit Court of Appeals to decide this constitutional question, since it held that the city had been deprived of the power to pass the ordinance. Nevertheless the majority opinion of the Circuit Court of Appeals sets forth a number of grounds for holding the ordinance unreasonable, indicating that the majority considered the ordinance unconstitutional (R. 1794). There is here a question of the propriety of a judicial pronouncement that a city regulation is invalid under the fourteenth amendment when there is evidence in the record showing that the ordinance is not unreasonable. If this court should decide that the city has power to forbid the use of paper milk containers, the decision of the constitutional question cannot be avoided. On this issue the specific question, under both the federal and Illinois constitutions, is whether or not the respondent has proved that the ordinance, in forbidding the use of paper milk containers, is so palpably unreasonable as to be arbitrary or capricious, so that the provision bears no reasonable relation to the protection of the public health.

Specification of errors.

(1) The Circuit Court of Appeals erred in holding the provision of the Chicago ordinance to be in conflict with the public policy of the State of Illinois.

(2) The Circuit Court of Appeals erred in directing the issuance of an injunction and declaratory judgment in favor of the respondent.

(3) The Circuit Court of Appeals erred in not reversing the finding of the trial court that the ordinance is unreasonable and unconstitutional if it forbids the use of paper milk containers.

(4) The Circuit Court of Appeals erred in not holding that the judgment of the trial court should be reversed and a decree entered in accordance with the findings in the master's report.

Summary of Argument.

I. The Illinois Milk Pasteurization Plant Act of 1939 did not deprive the city of power to pass the ordinance.

The Illinois Cities and Villages Act of 1872 as construed by the Illinois courts granted power to the city to prescribe the character of the containers in which milk is sold and this included the power to forbid the use of paper milk containers. The power was not impaired by the Milk Pasteurization Plant Law of 1939. This is clear from an analysis of the language and a consideration of the purpose of the saving clause in the statute. The Circuit Court of Appeals' construction of the 1939 statute disregards the plain language of the saving clause and violates elementary rules of statutory construction. The Illinois Supreme Court would not have decided the case as did the Circuit Court of Appeals. This court should decide on the merits the question of the city's power.

II. The ordinance is not invalid on constitutional grounds.

(a) The principles governing the validity of the ordinance under the due process clauses of the federal and Illi-

nois constitutions are well settled. Debatable questions as to the reasonableness of the ordinance are for the legislative body and not the courts to determine. The courts may declare health legislation invalid only if palpably arbitrary or capricious. Regulations of containers and many regulations of the milk industry have been sustained.

(b) Evidence in the record shows that to forbid the use of paper containers for delivering milk is not unreasonable. The master found that there are potential public health hazards in the use of paper milk containers. The Circuit Court of Appeals admitted that there was evidence in the record that their use presents a hazard to health. (1) Paper containers are not sterile when formed and do not receive effective bactericidal treatment before they are filled with milk. (2) Paper containers are absorbent. (3) Paraffin from paper containers gets into the milk placed in them. (4) Odors from paraffin and bacteria in paper containers are imparted to the milk. (5) Effective sanitary control of paper containers requires supervision and control of all processes in the manufacture of paper and its conversion into containers. (6) Paper containers are not transparent and cream does not rise to the top in them.

(c) Factors relied on by the District Court and in the majority opinion of the Circuit Court of Appeals are not controlling. The presumption of validity of the ordinance is as strong as when the ordinance was enacted. The use of paper milk containers elsewhere, their regulation by the State of Illinois and in the model ordinance of the United States Public Health Service, the use of paper containers for other purposes, and the proposal by the Chicago Board of Health that the City Council permit their use for delivering milk are factors that are immaterial both in fact and in

law. The prohibition of the use of paper milk containers is not so unrelated to any possible danger to the public health as to be considered an arbitrary interference with property rights.

ARGUMENT.

I.

The Illinois Milk Pasteurization Plant Act of 1939 did not deprive the city of power to pass the ordinance.

A question of construction of Illinois statutes is presented. The Circuit Court of Appeals held the ordinance invalid on the ground that it is contrary to a public policy of the state found by the court to be expressed in an Illinois statute, the so-called Milk Pasteurization Plant Law of 1939 (Laws of Illinois, 1939, pp. 660-666; Ill. Rev. Stat. 1941, ch. 56½, secs. 115-134).* Illinois cities derive their powers from the state legislature and have only such powers as have been delegated to them by the legislature. *City of Chicago* v. *Murphy*, 313 Ill. 98, 101 (1924). Consequently the acts of the Illinois General Assembly must be looked to for the existence and extent of any power exercised by a city.

There is no constitutional objection to regulation of the same subject by statute and by ordinance. In *City of Chicago* v. *Union Ice Cream Co.*, 252 Ill. 311 (1911), the court said (p. 314):

> "... The great weight of authority is to the effect that the legislature may confer police power upon a municipality *over subjects within the provisions of existing State laws.* An act may be a penal offense

* The entire act is printed as *Appendix A* in this brief.

under the laws of the State, and further penalties, under proper legislative authority, may be imposed for its commission by municipal ordinances. The enforcement of one would not preclude the enforcement of the other. (Citing authorities.) Municipal corporations are bodies politic, vested with many political and legislative powers for local government and police regulations, established to aid the government by the State. The necessity for their organization may be found in the density of the population and the conditions incidental thereto. *Because of this, the municipal government should have power to make further and more definite regulations than are usually provided by general legislation and to enforce* them by appropriate penalties." (Italics added.)

Power of Cities under the 1872 Act.

As originally enacted in 1872, article 5 of the Illinois Cities and Villages Act contained the following provisions:

"Section 1. The city council in cities, and the president and the board of trustees in villages, shall have the following powers:

"Section 50. To regulate the sale of meats, poultry, fish, butter, cheese, lard, vegetables, and all other provisions, and to provide for place and manner of selling the same.

"Section 53. To provide for and regulate the inspection of meats, poultry, fish, butter, cheese, lard, vegetables, cotton, tobacco, flour, meal and other provisions.

"Section 66. To regulate the police of the city or village and pass and enforce all necessary police ordinances.

"Section 78. To do all acts, make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease." (Public Laws of Illinois, 1871-72, pp. 231-233.)

Except for minor amendments not material here, there had been no changes in these provisions in 1939. (Sections 65, 65.49, 65.52, 65.65 and 65.77, ch. 24, Ill. Rev. Stat. 1939.) And these provisions are incorporated in the new Illinois Revised Cities and Villages Act which went into effect on January 1, 1942 (ch. 24, secs. 1-1 to 87-5, Ill. Rev. Stat. 1941), the corresponding sections being sections 23-1, 23-63, 23-64, 23-105, and 23-81, ch. 24, Ill. Rev. Stat. 1941. In fact section 23-63 of the new statute is more specific than was section 50 of article 5 of the 1872 statute in granting municipalities power to regulate the manner of selling milk for human consumption. Section 23-63 reads:

> "To regulate the sale of all beverages and food for human consumption; to locate and regulate the places where and *the manner in which any beverage or food for human consumption is sold; . . .*" (Italics added.)

The provisions of the 1872 act have been interpreted by the Illinois Supreme Court to grant cities very broad regulatory powers over the milk industry. A leading case is *Koy* v. *City of Chicago*, 263 Ill. 122 (1914), where the court held valid an ordinance requiring the use of a certain apparatus for the recording of temperatures during the pasteurization of milk. The court said (p. 127) of the above-quoted sections of the Cities and Villages Act:

> "The regulation of the sale of milk and its products is essential to the preservation of the public health, and authority for its regulation is clearly given to the city council by paragraphs 50, 53, 66 and 78 of section 1 of article 5 of the Cities and Villages act." (Citing cases.)

A more detailed statement of the power of the city under the statute was also made (pp. 130-131):

> "* * * There is no article of food in more general use than milk; none whose impurity or unwholesomeness may more quickly, more widely and more seri-

ously affect the health of those who use it. The regulation of its sale is an imperative duty which has been universally recognized. This regulation in minute detail is essential, and extends from the health and keeping of the cows which produce the milk, through all the processes of transportation, preservation and delivery to the consumer. Not only may laws and ordinances require that milk offered for sale shall be pure, wholesome and free from the bacilli of any disease, but they may and do, in order to produce this result, prescribe the manner in which such purity, wholesomeness and freedom from disease shall be secured and made to appear. The cows may be required to be registered with a designated public authority; the dairies to be conducted and managed according to prescribed regulations, and, together with the dairy utensils, subjected to inspection; the receptacles in which milk is contained to be of prescribed character and capacity; the labels to be placed according to fixed regulations and to contain certain required information; the milk to be prepared in the manner, at the times and by the means directed and at all times to be subject to inspection. These may be drastic restrictions upon a private business, but experience and the increasing knowledge of the causes of disease and the agencies of its propagation have demonstrated the necessity of such restrictions to the preservation of the public health. The object of all such restrictions is the preservation of the public health, and as a means to that end the protection of the general public against dishonest vendors of milk. They all impose inconveniences and expense upon the dealers in milk, but they are not on that account unreasonable, unjust or oppressive. Legislatures and city councils, in the exercise of the police power, may prohibit all things hurtful to the health and safety of society even though the prohibition invade the right of liberty or property of an individual."

The power of Illinois cities to regulate every detail of the milk industry is here said to extend to requiring "the receptacles in which milk is contained to be of prescribed

character and capacity." Before the *Koy* case the state Supreme Court in *City of Chicago* v. *Bowman Dairy Co.*, 234 Ill. 294 (1908), had held valid an ordinance requiring milk bottles to contain a permanent indication of their capacity.

These broad regulatory powers over the milk industry were possessed by the City of Chicago when it passed a comprehensive milk ordinance on January 4, 1935 (R. 23-112). The ordinance contains regulations of many aspects of the production and distribution of milk. Included was the particular provision involved in this case:

> "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles." (R. 108.)

This language required the use of the familiar glass milk containers. (So held the Circuit Court of Appeals in this case, R. 1788, the construction of the ordinance being one of the issues litigated in the lower courts.)

The language of the *Koy* case that a city has power under the Cities and Villages Act to require a milk receptacle to be of prescribed character shows clearly that the City of Chicago had power to require milk to be delivered in standard milk bottles, even though the use of a receptacle that was not a standard milk bottle—such as a paper container—was prohibited. So also other devices of the dairy industry that did not meet the requirements of the ordinance were prohibited. Necessarily a regulation that prescribes a standard forbids what does not meet the standard. This was pointed out by the Illinois Supreme Court in *Haggenjos* v. *City of Chicago*, 336 Ill. 573 (1929), where an ordinance that prohibited parking automobiles on streets during certain hours of the day was attacked on the ground that the power to regulate the use of streets did not include the power to prohibit. Of the relative terms "reg-

ulate" and "prohibit" the Illinois Supreme Court said (pp. 576-577):

> "It has been said often that the power to regulate does not include the power to prohibit; and this is true in the sense that mere regulation is not the same as absolute prohibition. Regulation of business or action implies the continuance of such business or action, while prohibition implies its cessation. On the other hand, *the power to regulate implies the power to prohibit except upon the observation of authorized regulation.* The ordinance does not prohibit the standing of vehicles on all streets throughout the city or at all times, but only on some streets at some times." (Italics added.)

The power to regulate the milk industry and milk containers thus included the power to require a prescribed container, and this power included in turn the power to forbid the use of a container that did not meet the requirements imposed. Under the 1872 statute the City of Chicago thus had power to forbid the use of paper milk containers and to enact the ordinance so providing.

Effect of the 1939 statute on the power of cities.

The title of the Milk Pasteurization Plant Law of 1939 is as follows:

> "An Act regulating the handling, processing, labeling, sale and distribution of pasteurized milk and pasteurized milk products." (Laws of Illinois, 1939, p. 660; Ill. Rev. Stat. 1941, ch. 56½, sec. 115; Appendix A, *infra*.).

Sections 1 to 18 of the act contain numerous regulatory provisions, including a requirement in section 15, item 10, that "single service containers . . . shall be manufactured and transported in a sanitary manner". Section 19 is a saving clause. It is the contention of the petitioners that

this saving clause retains intact the regulatory powers of the city that existed before the enactment of the statute. Section 19 reads as follows:

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk and pasteurized milk products, provided that such regulation not permit any person to violate any of the provisions of this Act." (Ch. 56½, sec. 133, Ill. Rev. Stat. 1941; Appendix A, *infra.*)

The meaning of this saving clause is the vital question on this branch of the case. The Circuit Court of Appeals holds that it did not prevent the impairment by the statute of some of the city's power. The petitioners contend that its positive and unambiguous language has been disregarded by this holding.

It is not necessary to analyze the 1939 act in detail to see if it contains anything that is not covered by the terms of the saving clause. The saving clause is in the language of the title of the act. The title describes the act as one regulating the "handling, processing, labeling, sale and distribution" of milk, and the saving clause states that nothing in the act shall impair the power of the city to regulate the "handling, processing, labeling, sale or distribution" of milk—the identical subjects named in the title. The Illinois constitution contains the common provision that an act may embrace only the subject expressed in the title,* so that any subject in the act that is not embraced in the title is invalid. By using the language of the title in the

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* "No act hereafter passed shall embrace more than one subject, and that shall be expressed in the title. But if any subject shall be embraced in an act which shall not be expressed in the title, such act shall be void only as to so much thereof as shall not be so expressed. . . ." (Article 4, sec. 13, Illinois Constitution of 1870.)

clause that saves the power of cities and villages, the legislature thus necessarily saved to them their pre-existing power over the entire subject-matter covered by the act. The identity of the language in the saving clause with that in the title thus makes the saving clause as broad as it could possibly be made, so that, whatever aspects of the milk industry may be subjected to state-wide regulation by the statute, cities and villages retain to the fullest extent every power that they had theretofore. This identity of language alone indicates unmistakably that the saving clause preserved the city's power to forbid the use of paper milk containers. But the same result is reached by considering other aspects of the saving clause.

There is only one limitation in the saving clause on this complete retention of the power of cities: the proviso says that city regulation shall "not permit any person to violate any provisions" of the act. By expressing only one exception to the retention of power the legislature has indicated an intention that there is no other exception. This is a clear case for the application of the rule that the expression of one exception excludes other exceptions [see *People* v. *Deep Rock Oil Corp.*, 343 Ill. 388, 401 (1931)]. The ordinance forbids the use of paper milk containers and does not permit a violation of the act. Not being within the exception, the power of the city has been retained.

Only a cursory reading of the saving clause reveals a legislative intention not to make any change whatever in the powers of cities to regulate the sale of milk, including the power to forbid the use of paper milk containers. A detailed exposition of the language of the section leaves no possible doubt of this intention:

"*Nothing in this act . . .*". In spite of these self-explanatory words, the Circuit Court of Appeals finds *some-*

thing in the act that indicates a public policy affecting the powers of cities.

"*. . . shall impair or abridge . . .*". These words mean that the act was intended not to weaken or curtail the power which cities had before the act was passed. Yet the Circuit Court of Appeals holds squarely that the statute makes the city's power less than it was before.

"*. . . the power of any city, village or incorporated town . . .*". The power of cities to regulate milk was derived from the Illinois Cities and Villages Act of 1872 quoted above and interpreted by the Illinois Supreme Court in the *Koy* and other cases.

"*. . . to regulate . . .*". "To regulate" means "to control, govern, or direct by rule or regulation, to subject to guidance or restriction" (Oxford English Dictionary, *regulate*). "Regulate" was the very word used in the grant of power in the Illinois Cities and Villages Act of 1872 quoted above (cities were given power "to regulate the sale of . . . provisions", and to ". . . make all regulations which may be necessary or expedient for the promotion of health or the suppression of disease"). Under that act, as was stated in the *Koy* case, the power to regulate the milk industry included the power to prescribe the character of the receptacle in which milk is sold; and the power to regulate containers included the power to forbid the use of paper containers. The use of the same word "regulate" in the saving clause in the 1939 statute evidences an unmistakable legislative intention that cities may continue to forbid the use of paper containers.

"*. . . the handling, processing, labeling, sale and distribution of pasteurized milk and pasteurized milk products, . . .*". As we have noted, these words describe the field of regulation described in the title of the act. Clearly the

words "sale and distribution" include the type of container in which the product is sold or distributed.

"*. . . provided such regulation not permit any person to violate any of the provisions of this act.*" As we have noted, this single limitation on the power of cities retained by the act indicates an intention that there are no other exceptions. A regulation that forbids the use of particular containers does not permit a violation of any state regulation. This would only be true of a regulation that permitted a type of container forbidden by the statute. The legislature's reason for inserting this proviso in the saving clause is apparent: the other language in the saving clause is so broad that, without the proviso, a city regulation might be valid even though it permitted a violation of the statute.

There is no conflict between the ordinance, which forbids the use of paper milk containers, and the statute which regulates their use. The ordinance cannot be in conflict with a statute that specifically keeps alive the city's power to pass the ordinance. Also, there is no conflict in fact. The statute does not say that paper containers *must* be permitted. It merely recognizes the possible use of paper containers and regulates certain aspects of their use. The City of Chicago's more stringent regulation—forbidding their use—is not in conflict; it merely carries regulation further than the State of Illinois does.

And even aside from the saving clause, the statute permits a city to regulate in the same field. Section 15 of the Act contains 23 items of regulation, requiring in item 10 that single-service containers "shall be manufactured and transported in a sanitary manner." This same section authorizes the Director of the State Department of Public Health to adopt "*minimum* requirements . . . for interpre-

tation and enforcement" of the Act. The use of the word "minimum" indicates that more stringent requirements may be imposed by some agency other than the state. This can only mean a city or a village. The language of the statute thus shows that the legislature intended to permit cities and villages to occupy the same field of regulation as the state and (in the language of the *Ice Cream Company* case) "to make further and more definite regulations."

The purpose of the saving clause is clear. The statute is designed to prescribe minimum sanitary standards that are effective throughout the state, both in urban and rural communities. Some cities and villages, because of special problems created by location or by density of population or merely because of a desire to exercise the utmost vigilance in protecting consumers from contaminated milk, may deem it important to impose higher standards than those imposed by the statute. The necessity for municipal regulation that differs from state regulation was clearly recognized by the Illinois Supreme Court in the *Ice Cream Company* case quoted above (pp. 12-13). It was this necessity that the legislature undoubtedly had in mind in stating in plain and unambiguous language that the power of cities and villages should remain intact. So the saving clause says expressly that municipalities may continue to make regulations as broad in scope and as stringent as those authorized under the 1872 statute, subject to the proviso that the municipal regulations must not fall below the minimum standards fixed by the state. The statute thus places a floor under municipal milk regulations. The power of the City of Chicago to forbid the use of paper milk containers was not affected by the statute.

The Circuit Court of Appeals' construction of the 1939 statute.

While the saving clause says that the 1939 statute shall not impair or abridge the city's power, the Circuit Court of Appeals holds that the city's power is less than it was before the statute was passed. The majority opinion of the Circuit Court of Appeals thus disregards the plain language of the statute. This was the view of the dissenting judge, who in his opinion said that the saving clause "was not meaningless or surplusage, as announced in the majority opinion" but was "in the nature of a declaratory clause maintaining the existing status, inserted by the legislature in an abundance of caution, to assure municipalities that their power to act in the premises was not taken away" (R. 1795). It is significant that the majority opinion does not even mention article 5 of the Illinois Cities and Villages Act of 1872 which, as quoted above, granted the City of Chicago broad regulatory powers over the milk industry.

From the fact that the statute and the regulations of the state Department of Health contain a few regulations of paper containers (such as the provision in item 10 of section 15 that "single service containers . . . shall be manufactured and transported in a sanitary manner"), the majority opinion concludes that "the use of single service containers such as used by the plaintiff for the distribution of milk is permitted and approved upon compliance with the Act" (R. 1791). The opinion stresses the fact that the respondent has complied with the state requirements and has been issued a certificate of approval:

> "By this token it [the respondent] has been authorized by the state to sell and distribute its product within the confines of Illinois in single service contain-

> ers. The city of Chicago, however, by the prohibition contained in its ordinance, denies this right conferred by the State." (R. 1791-92.)

This conclusion fails to take into account the rule that in construing a statute the entire act must be considered. Any certificate of approval granted to the respondent was granted under the statute and, if the respondent may be said to have a "right conferred by the state" to use a container that merely meets state requirements, that right was derived from the statute. This very statute said that the power of cities to forbid the use of paper containers was not impaired. Certainly the "certificate of approval" and any right to use a particular container are effective only within the purview of the statute. As a result a certificate or right granted under the statute is subject to the municipal regulation which the statute expressly permits. When the entire act is considered, this is what the legislature said. The prohibition in the ordinance does not deny a right conferred by the statute when the statute itself says that the prohibition may be imposed.

The basic fallacy in the reasoning of the Circuit Court of Appeals is shown by following the steps by which the conclusion of invalidity was reached. The reasoning of the opinion is: the statute regulates paper containers and permits their use; in prohibiting the use of what the statute permits, the ordinance conflicts with the statute; the rule therefore applies that ordinances may not conflict with the state law; and the saving clause may not be construed to give the city "authority to outlaw that which the state has legalized". The opinion finds the conflict, not with the statute as a whole, but with isolated sections that mention paper containers. The court does not even refer to the saving clause in the statute until *after* it has determined

that the ordinance violates a public policy found in another part of the statute.

In finding a public policy from only a part of the statute and in disregarding the saving clause, the majority opinion violates the familiar rule that in construing a writing the entire writing is to be considered. See *People* v. *Whealan*, 353 Ill. 500 (1933), at p. 506:

> "It is a fundamental rule of statutory construction that the intention of the lawmaker should be deduced from a view of the whole statute and of every material part of it." (Citing many cases.)

Another cardinal rule of construction is violated by the opinion in the disregarding of the language of the saving clause: words should not be held to be surplusage if they may possibly be given effect. In *Crozer* v. *People*, 206 Ill. 464 (1904), the rule was stated (pp. 469-470):

> "It is a cardinal rule of construction that a statute should be so construed that, if it can be prevented, no clause, sentence or word shall be superfluous, void or insignificant, but that it shall be so construed, if possible, that every sentence and word shall be given its ordinary meaning and acceptation. (*Decker* v. *Hughes*, 68 Ill. 33; *Thompson* v. *Bulson*, 78 *id.* 277; *Perteet* v. *People*, 65 *id.* 230.) In the last case the following language from Lord Coke is quoted: '*The good expositor makes every sentence have its operation; gives effect to every word; will not construe it so that anything shall be vain or superfluous, but so expressed that one part of the act may agree with the other and all may stand together.*'" (Italics added.)

In view of the language of the saving clause, the opinion finds in the statute a declaration of public policy that is not there. This again violates a cardinal rule of statutory construction, stated in *Sup* v. *Cervenka*, 331 Ill. 459 (1928), where the Illinois Supreme Court said (pp. 461-462):

"It is an elementary rule in the construction of a statute that the intention of the legislature must primarily be determined from the language of the statute itself and not from conjecture *aliunde*. When that language is plain and unambiguous and conveys a clear and definite meaning there is neither necessity nor authority for resorting to statutory construction. *If the words of a statute are plain and the legislative purpose manifest, that purpose must be given effect. The courts have no legislative powers*, and in the interpretation and construction of statutes *their sole function is to determine*, and within the constitutional limits of the legislative power to give effect to, *the intention of the legislature*. They cannot read into a statute something that is not within the manifest intention of the law-making body as gathered from the statute itself. To depart from the meaning expressed by the words is to alter a statute—it is to legislate and not to interpret. . . ." (Italics added)

It is difficult to understand why the Circuit Court of Appeals went as far as it did in disregarding the language of the saving clause. The opinion says of the petitioners' construction of the saving clause, "It would make the state subservient to the city". The effect of the opinion is that it is beyond the power of a state legislature to prescribe minimum standards to be observed throughout the state and at the same time to authorize municipalities to fix more stringent standards if they consider it necessary to do so. If, in such a situation, the state could be said to be "subservient", it has voluntarily assumed that status and has the power to change it when it sees fit. If the state legislature sees nothing incongruous in such a relationship with its municipalities, the mere fact that it may not coincide with the court's conception of the proper symmetrical organization of government is immaterial.

In many jurisdictions there are constitutional and statutory provisions that expressly give municipalities local

home-rule over matters that are also regulated by the state. In fact the saving clause in the 1939 statute merely preserves the home-rule provisions as to milk regulations contained in the Cities and Villages Act of 1872 (now incorporated in the Revised Cities and Villages Act of 1941).

There is no rule of law that, regardless of the scope of the statutory grant of authority, the municipality may not forbid what the state permits. There is, of course, a rule that when a statute and an ordinance conflict or when an ordinance is contrary to a public policy stated in a statute, the statute controls. This rule has been applied in a number of Illinois cases, some of which are cited in the opinion of the Circuit Court of Appeals. *Village of Atwood* v. *Cincinnati, etc. R. Co.*, 316 Ill. 425 (1925); *City of Marengo* v. *Rowland*, 263 Ill. 531, 534 (1914); *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311, 315 (1911); *City of Chicago* v. *Drogasawacz*, 256 Ill. 34, 37 (1912). But this rule applies only when the contrary intention of the legislature is not revealed by the express language of the statute. The rule has no application when the intention of the legislature is expressed in clear language as in the saving clause of the Milk Pasteurization Plant Law of 1939. Nevertheless, this seems to be the rule applied by the two majority judges of the Circuit Court of Appeals.

The Circuit Court of Appeals does not mention the most pertinent Illinois case construing legislative grants of municipal power: *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939). It is the most pertinent case because the statute construed contained a saving clause.

The *City of Ottawa* case involved a 1930 ordinance that contained detailed regulations of gasoline filling stations; the defendant was accused of erecting a filling station without frontage consents as required by the ordinance. An

Illinois statute of 1919 regulated "the storage, transportation, sale and use of gasoline" and authorized the state Department of Trade and Commerce to adopt regulations "except in cities or villages where regulatory ordinances upon the subject are in full force and effect." The question in the case was whether or not the saving clause was operative, in view of the provisions of the Cities and Villages Act of 1872* authorizing cities "to regulate and prevent storage . . . of petroleum" and an ordinance of 1916 regulating only the storage of gasoline and not undertaking to regulate filling stations. The court held that by virtue of the 1916 ordinance the city had sufficiently exercised its powers under the 1872 statute to enable it either to amend the 1916 ordinance *or to adopt a broader one;* and that consequently the 1930 ordinance was authorized and valid.

This *City of Ottawa* case presents a great contrast to the holding of the Circuit Court of Appeals. The Illinois Supreme Court held there that the 1919 saving clause, which was less extensive than the one here, preserved the pre-existing powers of the city granted in the 1872 act. The Illinois Supreme Court did not disregard the saving clause but interpreted it broadly and gave full effect to it. Here the Circuit Court of Appeals has not only failed to consider the 1872 act, but has disregarded the language of the 1939 saving clause. It has also disregarded this recent decision by the Illinois Supreme Court showing how the state courts construe legislative grants of municipal

* This is the very statute involved in the case at bar, article 5 of the Cities and Villages Act of 1872 (Public Laws of Illinois, 1871-72, pp. 231-233). Article 5 contains broad grants of powers to cities and villages. While the *City of Ottawa* case involved section 65 of article 5, the instant case involves sections 50, 53, 66, and 78, now incorporated in the Revised Cities and Villages Act (1941) as sections 23-63, 23-64, 23-105, and 23-81 (ch. 24, Ill. Rev. Stat. 1941).

power. Undoubtedly the Illinois Supreme Court would not have decided the case at bar as has the Circuit Court of Appeals.

It is true that the majority opinion of the Circuit Court of Appeals attempts to give the saving clause some vitality by saying:

> "The courts of Illinois have frequently recognized that power exercised by municipalities may be conferred or withdrawn by implication (citing cases). It therefore appears reasonable that the sole purpose of the saving clause was to prevent a construction by implication, withdrawing the vast authority which the city had theretofore had over the milk industry. The ordinance of the City of Chicago and regulations of its Board of Health disclose scores of ways and means by which the industry is regulated, extending from the health of the cow producing the milk, to its delivery at the home of the consumer. The purpose of the saving clause, in our judgment, was to preserve in the city the unquestioned right to continue in a field which had been entered by the state, and in which, thereafter, each should have co-extensive power and authority." (R. 1792-93.)

If the city and the state have "co-extensive power and authority," it would seem that the city has power to forbid the use of paper milk containers; the state clearly has the power even though it has not been exercised. The court's own statement of the purpose of the saving clause is thus inconsistent with its holding that the city regulation is invalid.

This self-contradiction is inevitable, for the language of the opinion cannot conceal the fact that the holding nullifies the saving clause. If there is a need for both city and state regulations, as evidenced by the saving clause, there are bound to be differences between them. *Any city regulation that goes further than the minimum state regu-*

lations forbids what the state regulations permit. Under the holding of the Circuit Court of Appeals, all that remains of the city's power to protect its citizens from a contaminated milk supply would seem to be the empty authority to make regulations that coincide with state regulations. It seems clear that this holding invalidates other provisions of the milk ordinances of Illinois municipalities. For example, section 7 of the 1939 statute contains labeling provisions, requiring milk containers to be marked with the name of the contents, with the word "pasteurized" if the contents are pasteurized, and with the name and the post office address of the pasteurization plant. The labeling provisions in the Chicago ordinance (sec. 3090, R. 37-38) are much more extensive, requiring (among other things) that the date on which the milk is to be sold shall be marked on the container, a regulation designed to insure that too great an interval of time does not elapse between pasteurization and sale to the consumer. The statute permits the use of undated containers and "approves" their use, while the ordinance prohibits the use of undated containers. If the holding of the Circuit Court of Appeals stands, the city requirement is invalid because it conflicts with the "public policy" of the state as expressed in the statute.

The effect of the decision of the Circuit Court of Appeals is far-reaching. Not only the City of Chicago but every city and village in Illinois is deprived of power to make effective local regulations of the milk industry. And the decision goes further. The boundary between the fields of state and local regulations may not be clearly defined. The decision of the Circuit Court of Appeals in effect takes away from the state legislature the power to fix the boundary and the court, in the exercise of its function to construe statutes, assumes the power itself. In fixing the

boundary where it did, the Circuit Court of Appeals has affected adversely the regulatory powers of Illinois cities and villages over other subjects that the state has begun to regulate.

This case presents a simple problem. The 1872 statute gave the city power to forbid the use of paper milk containers. The 1939 statute said expressly that nothing therein impairs the power of cities. The words in the saving clause can mean only what they say and the city still has power to forbid the use of paper milk containers. The 1935 ordinance is therefore valid and the Circuit Court of Appeals erred in holding it invalid because beyond the city's power.

* * * * * * *

The petitioners urge this court to decide on the merits the local question of the city's power.

The petitioners do not ask the court to reverse the case on the mere ground that the Circuit Court of Appeals, as a result of the holdings in *Hawks* v. *Hamill,* 288 U. S. 52 (1933) and *Railroad Commission of Texas* v. *Pullman Co.,* 312 U. S. 496 (1941), should have refused to order an injunction based on its decision of the local, state question of the city's power. The position of the petitioners on this aspect of the case requires an explanation.

The question of the city's power under the 1939 statute was not raised and could not have been raised in the complaint, for the complaint was filed in February, 1939 and the 1939 statute did not become effective until July 1, 1939. The prayer of the complaint (R. 14) sought a declaratory judgment and an injunction on two alternative grounds: (a) the Chicago ordinance permits the respondent to use paper milk containers or (b), if not, the ordinance is un-

constitutional. The only indication in the record about how the question of the city's power was first raised is the statement in the master's report (R. 1732) that the "plaintiff refers" to the statute. The master disposed of the point in one sentence, saying that section 19 "preserves the pre-existing home rule of municipalities" (R. 1732). Similarly the opinion of the trial court discussed the point in only one sentence, saying that under the statute "the city is without power to prohibit" the use of paper milk containers (R. 1756). The trial court's findings of fact, conclusions of law, and decree (R. 1756-1761) did not find or decide that the ordinance conflicts with the 1939 statute, but merely said that the respondent's containers conform with the provisions of the statute. The majority opinion of the Circuit Court of Appeals indicates that the court's decision against the defendants was based on the holding that the city's power was impaired by the 1939 statute, although the two majority judges also indicated that they considered the ordinance unconstitutional.

To remand the cause to the District Court with directions to retain it pending the determination of the state issue in the state courts, as was done in the *Pullman Company* case, would bring much inconvenience to the litigants. The rulings of the lower courts adverse to the city have clouded the powers of Illinois municipalities. Only by obtaining from this court a decision that the city has power to enact the ordinance may the city be restored to the position it had before the decision by the Circuit Court of Appeals. The suit was begun more than two and a half years ago and has gone through the lengthy process of extensive master's hearings, hearings in the trial court on objections to the master's report, an appeal to the Circuit Court of Appeals, and now a review by this court on peti-

tion for certiorari.* If the cause were remanded to await a determination of the question by the highest state court, the far-reaching effects of the action of the Circuit Court of Appeals in cutting down the powers of Illinois municipalities will remain operative for many months to come. The damage done should be remedied as soon as possible.**

There are several factors present here that were absent in the *Pullman Company* case. (1) We have noted the inconvenience to the litigants and the continuance of doubt as to the powers of Illinois municipalities that would result from a remandment of the case for a determination of the question in the state courts. (2) Moreover, unlike the *Pullman Company* case, this case was not instituted for the purpose of having the federal courts determine the local question. One policy behind the decision in the *Pullman Company* case seems to be to discourage litigants

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* In connection with the duration of the litigation, it is important to realize that the petitioners have been unable to take advantage of the provisions of section 266 of the Judicial Code (28 U. S. C. 380) for the speedy determination of constitutional questions in the trial court and on appeal. This is the familiar provision that an application for an injunction to restrain state officers in the enforcement of a statute on the ground of its unconstitutionality shall be heard and determined by three judges and that a direct appeal may be taken to this court from the decree granting or denying the injunction. In this case the respondent sought an injunction on the ground that the ordinance was unconstitutional, the trial court so found, and the trial court entered the injunction prayed. Since the question is the constitutionality of an ordinance rather than the constitutionality of a statute, petitioners have been unable to have the matter determined by a three-judge trial court or to appeal directly to this court. There have been a number of decisions to the effect that section 266 of the Judicial Code does not apply to ordinances. *Cumberland Telephone & Telegraph Co.* v. *City of Memphis*, 198 F. 955 (D. C. Tenn. 1912); *City of Baton Rouge* v. *Baton Rouge Waterworks Co.*, 30 F. 2d 895 (C. C. A. 5th, 1929).

** It has been suggested that the delay caused by a remission of the case to the state courts may be a determinative factor in the decision of this court to pass upon the local question. 54 *Harv. L. Rev.* 1379, 1384 (1941).

from bringing local problems into the federal courts. This policy does not require a remission of this case to the state court when the local question comes into existence, as here, after the filing of the suit and even after the trial of the case has begun (hearings before the master began May 31, 1939, R. 132, and the 1939 statute went into effect on July 1, 1939; at that time the master had heard important testimony, R. 144-440, and depositions had been taken, R. 1333-1396). (3) Unlike the local questions in the *Hawks* and *Pullman Company* cases, the question of the city's power is free from difficulty. This is apparent from the preceding argument. Here, without looking to the decisions of the Illinois courts, it is necessary only to read the plain language of the saving clause in the 1939 statute in order to determine that the statute has not impaired the city's power.

For these reasons the petitioners urge this court to decide the question of the power of the city to enact the ordinance under the 1872 and 1939 state statutes.

II.

The ordinance is not invalid on constitutional grounds.

The validity of the ordinance under the federal and Illinois constitutions was questioned in the complaint. It alleged (R. 11) that the ordinance deprives the respondent of the equal protection of the laws and of its property without due process of law in violation of the fourteenth amendment to the federal constitution * and article 2, section 2 (a due process clause similar to the fourteenth amendment clause) of the Illinois constitution.** Most of

* U. S. Const., Art. XIV, sec. 1: ". . . nor shall any state deprive any person of life, liberty or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws."

** Ill. Const. of 1870, art. II, sec. 2: "No person shall be deprived of life, liberty or property, without due process of law."

the evidence heard by the master dealt with the reasonableness of the ordinance as an exercise of the police power. The trial court found, contrary to the master's findings (R. 1734), that the ordinance was unconstitutional (R. 1757). The majority opinion of the Circuit Court of Appeals states (R. 1794) that it does not "discuss at length or decide" this question. However, the opinion continues with a brief discussion of the question that indicates that the two majority judges considered the ordinance unconstitutional. The presumption that the ordinance is valid is said to be "little more than a shadow" because, when the ordinance was passed, the use of paper containers was in its incipient stage. And the evidence in the record that the use of such containers presents a hazard to health is said to carry "little, if any, conviction" in view of other factors—chiefly the fact that the containers are permitted elsewhere.

We discuss as one question (as did the lower courts) the reasonableness of the ordinance under the due process clauses of the federal and Illinois constitutions, although one clause presents a question of federal law and the other a question of state law; as shown by the cases cited below, the same principles govern each clause. And the same discussion covers the question of whether or not the record contains proof of the allegation of the complaint that the respondent is deprived by the ordinance of the equal protection of the laws.

In casting doubt on the constitutional validity of the ordinance, the Circuit Court of Appeals has committed the error of substituting its judgment for the judgment of the Chicago City Council as to the need for the ordinance. Even though only a dictum, this judicial pronouncement of the unreasonableness of the ordinance is an interference with legislative discretion in view of the evidence in the

record. And the constitutional question must be decided if this court holds that the city had power to pass the ordinance. For these reasons the law as to the validity of legislation enacted under the police power and the evidence as to potential public health hazards in the use of paper milk containers must be considered.

(a) Principles governing the validity of the ordinance under the due process clause.

The rules for determining the reasonableness of legislation enacted under the police power have been announced in many opinions. We note a few illustrative cases that indicate the scope of judicial review. In *Standard Oil Company* v. *City of Marysville*, 279 U. S. 582 (1928), the court considered the validity of an ordinance which required that all tanks used for the storage of petroleum products be placed underground. Considerable evidence was heard about the relative safety of storage above and beneath the ground. Mr. Justice Stone delivered the opinion of the court and said (p. 584):

> "We need not labor the point, long settled, that where legislative action is within the scope of the police power, fairly debatable questions as to its reasonableness, wisdom and propriety are not for the determination of courts, but for that of the legislative body on which rest the duty and responsibility of decision." (Citing many cases.)

In *Laurel Hill Cemetery* v. *San Francisco*, 216 U. S. 358 (1910), the court considered the validity of an ordinance which prohibited the burial of the dead within the city and county limits. The ordinance was attacked on the ground that there was no hazard to public health in the maintenance of cemeteries within cities. The court in its opinion (by Mr. Justice Holmes) showed clearly its re-

luctance to substitute its judgment for that of the municipal legislative body (p. 365):

> "But the propriety of deferring a good deal to the tribunals on the spot is not the only ground for caution. If every member of this bench clearly agreed that burying grounds were centers of safety, and thought the board of supervisors and the supreme court of California wholly wrong, it would not dispose of the case. There are other things to be considered. Opinion still may be divided, and if, on the hypothesis that the danger is real, the ordinance would be valid, we should not overthrow it merely because of our adherence to the other belief. Similar arguments were pressed upon this court with regard to vaccination, but they did not prevail. On the contrary, evidence that vaccination was deleterious was held properly to have been excluded." (Citing *Jacobson* v. *Massachusetts,* 197 U. S. 11 (1904), where the compulsory vaccination statute of Massachusetts was held valid.)

Schmidinger v. *Chicago,* 226 U. S. 578 (1912), involved the validity of an ordinance prescribing the weights for loaves of bread and prohibiting the sale of any loaves of bread which did not comply with the prescribed weights. Concerning the validity of this ordinance the court said (pp. 587-8):

> "* * * It is contended that the limitation of the right to sell bread which this ordinance undertakes to make in fixing a standard loaf * * * is such an unreasonable and arbitrary exercise of legislative power as to render it unconstitutional and void. This court has frequently affirmed that the local authorities intrusted with the regulation of such matters, and not the courts, are primarily the judges of the necessities of local situations calling for such legislation, and the courts may only interfere with laws or ordinances passed in pursuance of the police power where they are so arbitrary as to be palpably and unmistakably in excess of any reasonable exercise of the authority conferred." (Citing many cases.)

The presumption that the ordinance is valid is as strong on appeal as in the trial court. In *So. Carolina State Highway Dept.* v. *Barnwell Bros.*, 303 U. S. 177 (1936), a three-judge district court enjoined the enforcement of a statute forbiding the use on highways of trucks exceeding a prescribed width. In reversing the decision of the trial court, Mr. Justice Stone said at pp. 191-2:

> "Since the adoption of one weight or width regulation, rather than another, is a legislative not a judicial choice, *its constitutionality is not to be determined by weighing in the judicial scales the merits of the legislative choice and rejecting it if the weight of evidence presented in court appears to favor a different standard.* (Citing cases.) Being a legislative judgment it is presumed to be supported by facts known to the legislature unless facts judicially known or proved preclude that possibility. Hence, in reviewing the present determination *we examine the record, not to see whether the findings of the court below are supported by evidence, but to ascertain upon the whole record whether it is possible to say that the legislative choice is without rational basis.* (Citing cases.) Not only does the record fail to exclude that possibility, but it shows affirmatively that there is adequate support for the legislative judgment." (Italics added.)

The Illinois Supreme Court applies the same rules as the United States Supreme Court in considering the validity of legislation enacted under the police power. See *People* v. *Quality Provision Co.*, 367 Ill. 610 (1938), where the court noted that legislation will not be held unreasonable if the subject may be regarded as debatable (p. 614). See also *Gundling* v. *City of Chicago*, 176 Ill. 340 (1898); *City of Chicago* v. *Bowman Dairy Co.*, 234 Ill. 294 (1908); *City of Chicago* v. *Arbuckle*, 344 Ill. 597, 604-5 (1931).

These principles have recently been applied to uphold the regulation of containers in a case that seems controlling in the case at bar: *Pacific States Box & Basket Co.*

v. *White,* 296 U. S. 176, 181-182 (1935). The regulation there held valid required that raspberries and strawberries be packed only in certain containers called "hallocks" of specified dimensions. One of the reasons there given by Mr. Justice Brandeis for holding the regulation not invalid was that "the character of the container may be an important factor in preserving the condition of raspberries and strawberries, which are not only perishable but tender." At page 182 Mr. Justice Brandeis said:

> "Different types of commodities require different types of containers; and as to each commodity there may be reasonable difference of opinion as to the type best adapted to the protection of the public. Whether it was necessary in Oregon to provide a standard container for raspberries and strawberries; and, if so, whether that adopted should have been made mandatory, involve questions of fact and of policy, the determination of which rests in the legislative branch of the state government. The determination may be made, if the constitution of the State permits, by a subordinate administrative body. With the wisdom of such a regulation we have, of course, no concern. We may enquire only whether it is arbitrary or capricious. That the requirement is not arbitrary or capricious seems clear. That the type of container prescribed by Oregon is an appropriate means for attaining permissible ends cannot be doubted."

A great variety of regulations of the milk industry have been sustained. In *Koy* v. *City of Chicago,* 263 Ill. 122, 130 (1914), the Illinois Supreme Court termed the regulation of the sale of milk "an imperative duty." *Nebbia* v. *New York,* 291 U. S. 502 (1933), upheld a state law that authorized an administrative board to regulate the price of milk. (The opinion of Mr. Justice Roberts at pp. 521-530 contains a comprehensive review of cases involving police power regulations.) We cite other cases holding milk regulations valid as indicated:

Adams v. *Milwaukee*, 228 U. S. 572, 583 (1911), an ordinance prohibiting milk to be brought into the city unless it was produced by tuberculin tested cattle.

Commonwealth v. *Wheeler*, 205 Mass. 384, 91 N. E. 415 (1910), a statute fixing a minimum standard of butter fat content for milk and prohibiting the sale of substandard milk.

City of Milwaukee v. *Childs Co.*, 195 Wis. 148, 217 N. W. 703 (1928), an ordinance prohibiting the sale of milk except in the original containers.

Pacific Coast Dairy v. *Police Court*, 214 Cal. 668, 8 Pac. 2d 140 (1932), a statute imposing a penalty for not returning milk containers marked with the registered brand of the owners.

City of Chicago v. *Bowman Dairy Co.*, 234 Ill. 294 (1908), an ordinance requiring milk bottles to contain a permanent indication of their capacity.

(b) Evidence in the record shows that the prohibition of paper containers for delivering milk is not unreasonable.

There is no need to labor the obvious point that the regulation of the distribution of fresh milk is a vital necessity, particularly in a city the size of Chicago. The production and distribution of 1,300,000 quarts of an easily contaminated liquid daily consumed in Chicago obviously give rise to special problems of regulation. And a peculiar importance is attached to milk regulations by the fact that milk is the staple item in the diet of infants.

The master heard much evidence on the question of the validity of the ordinance as a reasonable exercise of the police power. More than twenty witnesses testified for the

respondent (R. 132-940, R. 1243-1306) and nine witnesses testified for the petitioners (R. 942-1242). Approximately 120 exhibits were admitted in evidence (R. 1397-1708). There was admittedly testimony by some of the respondent's witnesses that the respondent's containers are sufficiently sanitary to permit their use for delivering milk. On the other hand, the testimony of the respondent's own witnesses revealed that paper containers have characteristics that create serious public health problems.

This is apparent from the master's report. After reciting the facts about the manufacture, processing, and filling of paper containers (R. 1718-22), the master found (R. 1723) that a legislative body might reasonably conclude that contamination might occur at one or more of the many stages from the pulp to the sealed container through carelessness, desire to save expense, inadequate facilities, or other reason. The master then discussed the evidence and made findings about the following matters: absorbency of paper containers (R. 1723-24), paraffin particles in the milk (R. 1724), odors from paraffin or bacteria (R. 1724-26), effective sanitary control of paper containers (R. 1726-29), non-transparency of paper containers and non-rising of cream to the top of containers (R. 1729-30). The master continued with the following general finding:

> "I find that there is evidence in the record, from plaintiff's own witnesses, independent of the corroborative testimony of Dr. Arnold, the City's witness, from which the City Council could reasonably have concluded that prohibition of paper containers was necessary and appropriate to protect the purity and wholesomeness of milk, or, to state the proposition another way, it is at least doubtful whether plaintiff has proved that there is not sufficient evidence tending to establish a reasonable basis for such conclusion." (R. 1734.)

The master then made specific findings of fact (R. 1734-35):

"I find that the legislative body may reasonably have based its decision on evidence tending to prove the following:

"There are steps in the manufacture, conversion and filling of paper containers in which bacteria may get into the walls of the containers.

"Paper containers, even when paraffined, are to some extent absorbent and the milk may absorb such bacteria.

"Sanitary conditions differ from one paper mill to another and even in the same mill from time to time.

"The sanitary condition of the mill is a significant factor as to the condition of the finished container.

"The sanitary condition of the paper board blank determines the sanitary condition of the finished container.

"Particles of paraffin get into the milk and constitute a foreign substance which preferably should not be in milk, especially for babies.

"Odors from paraffin, whether the paraffin is fresh or not, may get into the milk.

"If the paper board contains a high amount of bacteria, there may exude objectionable odors which may get into the milk.

"The control and precautions by paper manufacturers themselves may not be adequate.

"In the case of glass milk bottles, the City has the cleaning process at hand locally and can exercise complete control; in the case of paper containers, inspection at remote places may be necessary but impractical or too expensive.

"Some paper containers have been shown to contain high bacterial counts.

"Paper containers are not transparent as glass bottles, so that it is difficult to observe the quality of the milk or whether the milk contains dirt or other foreign body.

"Cream does not rise to the top in paper containers, so that purchasers may not readily know whether they are getting milk of the required fat content.

> "The United States Public Health Service Sanitation Board in June 1939 criticized paper containers on account of their absorbency and the sloughing off of paraffin."

The master concluded that the court must hold the ordinance valid and the prohibition of paper containers reasonable, and recommended that the court should not issue the injunction or render the declaratory judgment requested. (R. 1735-36.)

The majority opinion of the Circuit Court of Appeals said of the evidence about the reasonableness of the ordinance: *"It is true the record discloses some evidence in support of defendants' contention that the use of such containers presents a hazard to health"* (R. 1794). Without more this evidence would seem to be enough, under the applicable principles of law discussed above, to show that a court would be interfering with the legislative discretion of the Chicago City Council in holding that the ordinance was unreasonable in forbidding the use of paper milk containers. This was the view of the dissenting judge who stated:

> "The master found upon substantial evidence a number of facts bearing upon the undesirability of the use of paper milk bottles, showing clearly that at least the question of desirability of their use is debatable. In such case the city council is entitled to exercise its own administrative and legislative judgment,—a judgment not to be superseded by verdict of a jury or decision of a court." (Citing cases.) (R. 1796.)

This being the state of the record, the case of *Standard Oil Company* v. *City of Marysville*, 279 U. S. 582 (1928), shows that the record establishes the reasonableness of the ordinance as an exercise of the police power. In that case, as in the instant case, voluminous evidence was taken before the master. There much of the evidence was "con-

flicting, speculative and theoretical in character, concerning the relative safety of storage of petroleum products above and beneath the surface of the earth" (opinion, pp. 583-584). The master there made elaborate findings of fact, concluding that the ordinance was invalid, and the master's report was followed by the trial court. The action of the Circuit Court of Appeals in reversing the trial court was upheld in the Supreme Court. The findings of the master, although adverse to the validity of the ordinance, showed that there were dangers involved in storing gasoline above-ground as well as below-ground, the latter being required by the ordinance. Of the master's findings Mr. Justice Stone said (p. 584):

> "To determine that the present ordinance was a permissible exercise of legislative discretion, as thus defined, we need not go beyond those findings of the master to which petitioners offer no serious challenge."

So here the findings of the master based upon the testimony of the respondent's own witnesses show that the prohibition of the use of paper milk containers was a permissible exercise of legislative discretion.

This is apparent from a discussion of some of the characteristics of paper milk containers which show that their prohibition is clearly warranted by the necessity of protecting the city's milk supply. The following discussion is based almost exclusively on the testimony of the respondent's witnesses.

1. Paper milk containers are not sterile when formed and do not receive effective bactericidal treatment before they are filled with milk.

The complaint alleged repeatedly that the paper container advocated by the respondent is "sterile" (R. 4-8). To support these allegations the respondent's witnesses

resorted to a novel definition of what was termed "commercial sterility," and thus were enabled to testify that paper containers are "commercially sterile." This is illustrated by the following excerpts from the direct examination of Dr. Tracy:

> "Q. Have you an opinion from your experiments and from your research work, Doctor, now, as to whether this Pure-Pak Container is a sanitary sterile milk container?
>
> "A. I consider the Pure-Pak Container a sanitary container. I wouldn't consider it was sterile, if you put the proper interpretation on the word 'sterile'" (R. 510).

The evidence shows that empty paper containers may have bacterial counts higher than the permissible maximum. The respondent's witness Woodman testified about the bacterial content of paraffined, unfilled paper containers from the respondent's plant. Seven per cent of the hundred containers examined by the witness showed a bacterial count of more than the permitted maximum of 1000 per quart (R. 674). Prucha's examination of 70 examples of paper board, designed for use in paper milk containers and submitted by 5 different paper mills, showed that 42 samples of the 70 examined had a bacterial content, by disintegration test, of more than 100 colonies per gram, the maximum number permitted by the standard set by the United States Public Health Service in 1939. *Four* of the 70 samples examined showed no growth (R. 792-7; defendant's exhibit 7, R. 1671).

Because of the great heat applied, glass containers are absolutely sterile when manufactured (R. 169). Although a glass container is reused, it is thoroughly cleaned before each use, and the respondent's witnesses testified that with the best method of sterilization it is possible to obtain

a sterile glass container (Sanborn, R. 170). Dr. Tracy, an admitted partisan of paper containers (R. 526), testified that he had frequently visited dairies in Chicago (R. 659, 708-9) and had never observed any discrepancies in the washing of bottles in Chicago (R. 488-9). As to bacterial counts made at the University of Illinois dairy, he also testified that bottles washed in a soaker-type bottle washer ("operated essentially on the standards of the City of Chicago," R. 162) did not have a bacterial content higher than 600 per bottle (R. 490).

Not only is the paper in the paper container not sterile as manufactured; it cannot be made sterile before it is filled with milk. Paper containers are dipped in hot paraffin before they are filled with milk, but the application of paraffin does not produce an effective bactericidal result. There is an agreed statement in the record that, if the respondent's witness Prucha performed an experiment to ascertain whether or not the application of paraffin had a bactericidal action, the result would be: "paraffining will not kill all of the bacteria in the paper" (stipulation, par. 6, R. 127).

Dr. Sanborn testified that in his opinion the primary purpose of the application of paraffin is to moisture-proof the container, and "in addition to that, the paraffining *may* act as an additional sanitary safeguard, in that *certain* bacteria which *may* be present *might* be killed by the temperature of the melted paraffin" (R. 176). He testified again (R. 194) that paraffin as applied to paper containers "is not an effective sterilizing agent."

Perhaps the most significant evidence of the lack of effectiveness of paraffin as a bactericidal agent lies in the stress placed upon sanitary conditions in the mill in which the paper is manufactured by all of respondent's witnesses

who had any real knowledge of the sanitary condition of paper containers. If the application of paraffin was an effective sterilizing and moisture-proofing process, then it would be unnecessary to devote any attention whatsoever to the sanitary conditions under which the paper was manufactured. The record shows, however, that all of the energy of the leading scientists who have considered the subject is devoted to the matter of achieving sanitary conditions in paper mills and in the subsequent processing of the paper into containers. (See articles, Prucha, *Are Paper Milk Containers Sanitary?*, R. 1600-08; Sanborn *Mircrobiology in Pulp & Paper Manufacture*, R. 1665-70.)

It is not unreasonable to require the use of a container that can be sterilized immediately before use, as opposed to one that cannot be so sterilized.

2. Paper containers are absorbent.

The complaint alleged repeatedly that the respondent's paper container was non-absorbent (R. 4, 5, 8). During the course of the trial this allegation was demonstrated to be completely false by the respondent's own witnesses. Dr. Prucha stated that experiments to be made pursuant to a stipulation between the parties would show that paraffined paper containers were absorbent. The object of Experiment No. 1 was to ascertain whether or not fresh fluid milk would absorb substances contained in the cardboard wall of the finished container. Dr. Prucha's answer was affirmative (Stipulation, R. 127-28). All of the containers examined by Dr. Prucha showed absorption (R. 802). Dr. Tracy testified (R. 524) that he found Pure-Pak containers absorbent.

The United States Public Health Service states:

> "The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a non-absorbent non-flaking surface" (plaintiff's exhibit 61, R. 1591).

The absorbency of paraffin paper containes is of the utmost significance. It means that whatever is in the paper gets into the milk, even though the absorption is slight. As a result, the sanitary condition of the container does not depend merely upon the surface of the container but upon the sanitary condition of the paper from which the container is made. Another result is that the sanitary condition of the container cannot be effectively controlled by inspection and supervision of the dairies in which milk is placed in the container; the sanitary conditions in the paper mill in which the paper is manufactured determine to a large extent the sanitary quality of the container. The following paragraphs from Dr. Sanborn's direct examination indicate the importance of the sanitary condition of the paper from which containers are made:

> "The condition of the paper from which the container is made, the condition of the paper blank, the bacteriological condition of the paper determines the condition of the finished container. We have proven bacteriologically and by scientific methods that the paper blank that has a low bacterial count yields containers that have low bacterial count. On the other hand, paper board that has high bacterial counts—and of course there have been many such, because this thing has been in experimentation for a long time, and you run into paper board that has higher bacterial counts and those containers will also have high bacterial counts; so there is a direct connection between the sanitary condition of the blank and the sanitary condition of the finished container. That was

true in spite of any of the other factors I mentioned. Our investigation included, for example, investigation of paraffin. There are only three things, the paper, the adhesive that closes it and moisture proof paraffin that moisture proofs it. We were able to show and it has been proven conclusively that the paraffin is not a source of appreciable contamination: in fact, fully refined paraffin and used paraffin are essentially sterile. My investigation of adhesives has shown that there is no contamination from the adhesives, I mean the adhesives used are essentially sterile; so that that eliminates those two factors, that we went to right from the start. That leaves the paper board and that is one of the direct reasons why I stated that the bacteriological condition of the original board determines the final condition of the finished container bacteriologically; it is fundamentally important; it is essential that the paper board have a low bacterial count'' (R. 193-94).

"* * * Dirty contaminated paper board must never be used for milk because bacteriological tests on such board, even well paraffined board, are not satisfactory. The board used must be a sanitary bacteria-free board, essentially bacteria-free, to start with'' (R. 195).

Dr. Tracy testified to the same effect and emphasized the sanitary condition of the water used in the paper mill as important in determining the sanitary condition of the container. Dr. Tracy had tested the quality of the water supply at two paper mills then engaged in making paper for milk containers. Both water supplies showed the presence of B-coli—the sewage or intestinal bacteria. One of these mills was the mill at which the paper in respondent's container is manufactured (R. 512-13).

Perhaps the clearest connected picture of the sanitary significance of the absorbency of paper containers is in the testimony of the respondent's leading witness, Dr. Sanborn (R. 198-222, 230-43). Another interesting discussion of problems of mill sanitation by the respondent's witness,

Dr. Sanborn, appears in his article, *Microbiology in Pulp and Paper Manufacture* (R. 1665-70).

If paper containers were not absorbent, the material of which they were made and the sanitary conditions surrounding their manufacture would be matters of no public health significance. But with absorbent paper containers, the sanitary conditions in the paper mills, which vary from mill to mill and from hour to hour within a single mill (R. 213), determine to a large extent the sanitary quality of the finished container.

The only absorbency problem with the glass bottle is in the paper cap, but the problem is not of comparable significance. The area of the cap is very small in comparison with that of the entire paper container (see R. 279-81). Also, there is not a single fold in the paper cap, as there is along each of the many edges of the paper container, and the paraffin is more likely to chip off on the inside edges and corners of the container than on the flat surfaces.

After hearing the witness testify, the master found:

> "a legislative body might reasonably be of the opinion that there is some danger that the walls of the finished paper container may contain bacteria, and that, by reason of the absorbency of the container walls, even when paraffined, the bacteria may get into the milk" (R. 1724).

The master continued that the amount of absorbency is unimportant, the weight to be given being for the determination of the legislative body. In support of this statement the master cited *City of Chicago* v. *Arbuckle*, 344 Ill. 597 (1931), where the court said (pp. 604-5):

> "It is argued on behalf of the plaintiff in error that if there is any question of public health connected with the distribution of the articles dealt in by it the

question is very remote; that most of the operations involved in the preparation of its products are accomplished through the use of automatic machinery; and furthermore, that teas and coffees, before consumption, are prepared with boiling water in the home and spices and flavoring extracts are used sparingly in cooking. However remote the question may be, whether it exists and the degree of its importance are for the determination of the city council, and while its determination is not final, it will not be set aside if there is any reasonable relation between the action of the council and the public health. * * *"

It is not unreasonable for the City of Chicago to require that milk be distributed in a nonabsorbent container.

3. Paraffin from paper containers gets into the milk placed in them.

The record is clear that paper containers contribute paraffin to the milk that is placed in them. As noted above, the United States Public Health Service called attention to "the sloughing off of particles of paraffin into the product" as undesirable and urged manufacturers of paper containers to provide a non-flaking surface" (plaintiff's exhibit 61, R. 1591).

Respondent's witness Tracy testified that there is a need for a waterproofing material better than paraffin because of the tendency of paraffin on the inside of the paper container to chip off and get into the milk (R. 523, 4). He also testified that he put water in paper milk containers, sent them over the usual delivery route, and then examined for paraffin. There was paraffin in every one of the containers examined (R. 518).

Petitioners' witness Martinek confirmed Dr. Tracy's testimony. Martinek, who is in charge of the chemical laboratory of the Department of Health of the City of Chi-

cago, testified as to tests conducted to determine the presence of suspended paraffin in the milk in paper containers. Every one of the 138 containers examined revealed the presence of suspended paraffin, undissolved, in quantities ranging from 1 milligram to 107 milligrams per quart (R. 1009).

The significance of the presence of undissolved paraffin in milk which is fed to infants is apparent from the testimony of Dr. Robert A. Black, a pediatrician. He said that he preferred to have milk for children not adulterated with paraffin; that in the handling of babies even the appearance of evil is to be avoided (R. 1226-27). Although respondent's witness Dr. Vaughan testified as to the harmless effect of paraffin in liquid form, he also said that *undissolved* paraffin would go through the intestinal tract "as a foreign body" (R. 1306).

The right of the city to prevent the use of containers which adulterate the milk by the addition of a foreign substance is clear, regardless of whether or not the substance added is injurious to public health. *City of St. Louis v. Schuler*, 190 Mo. 524, 89 S. W. 621 (1905), involved the validity of an ordinance which prohibited the sale of milk containing "any foreign substance of any kind whatever, or coloring matter, or any adulteration or preservative • • • for any purpose whatever." The plaintiff added formaldehyde to milk for the purpose of preventing it from souring. The ordinance was sustained against the contention that the preservative added was harmless and indeed beneficial to public health. Concerning the claim that the constitutional rights of the distributor of the milk were violated by the statute, the court said, p. 624:

> "• • • He had the right to sell pure and unadulterated milk of the standard prescribed by the ordinance and the purchaser and the consumer of milk had the

> right to purchase from him pure milk unmixed with any foreign matter added to it, and this was what the ordinance required, no more and no less, and in so doing it infringed no provision of the organic law of this state or any article of the federal Constitution."

In *Commonwealth* v. *Schaffner,* 146 Mass. 412, 16 N. E. 280 (1888), the ordinance involved prohibited the adulteration of milk by the addition of a foreign substance. The defendant added a coloring matter called "Annato," and urged the invalidity of the ordinance upon the ground that the added matter was not injurious to health. The court said, p. 282:

> "It was immaterial whether the addition of the *annato* coloring matter was, or was not, injurious to health. The addition of pure water is punishable under the statute."

By statute in Illinois the addition of *any* foreign substance to milk or cream intended for sale or exchange is an adulteration. (Ill. Rev. Stat. 1939, chap. 38, sec. 14.)

The master found (R. 1724) that the legislative body charged with the "imperative duty" (*Koy* v. *City of Chicago,* 263 Ill. 122, 130) of regulating the purity of milk might not unreasonably refuse to permit such foreign substances as paraffin in milk, especially in milk for infants.

An ordinance is not unreasonable in prohibiting the use of milk containers that add a foreign substance to the milk.

4. Odors from paraffin and bacteria in paper containers are imparted to the milk.

It is a well-known fact that milk rapidly absorbs odors to which it is exposed. The evidence shows that there are two sources of odors in paper containers.

That paraffin has an odor was established by a simple gesture on the part of respondent's witness Dr. Sanborn at the hearing before the master. On direct examination, when asked whether or not a particular paper milk container, plaintiff's exhibit 31, had been paraffined (R. 293-4), he picked up the container and smelled it once or twice. His explanation of that action appears from the following excerpt from his testimony:

> "That is a mechanical operation I go through in examining containers of any kind; when I have a specimen to look at, I usually go through a certain number of procedures such as that.
>
> Q. Why did you smell it?
>
> A. To see if I can detect any odor.
>
> Q. What would the presence or the absence of odor indicate to you, Doctor?
>
> A. By the type of odor I detect I might be able to arrive at the reason for it. * * * I didn't remember I had done it when it was mentioned because it is an automatic process to me. I do recall that I did so.
>
> The paraffin might have been overheated and on certain containers the paraffin is heated too hot and if it is heated too hot they are likely to detect certain products of decomposition due to overheating.
>
> Q. What temperature range will produce those products of decomposition?
>
> A. I can give no definite answer to that, as to the temperature that might cause it.
>
> Q. Can you give some temperatures that are certain?
>
> A. Not only the temperature but the renewal of the paraffin is a factor there. If it is renewed, there will be less chance, even at high temperatures of heating any such off color. It is accompanied by a change in color as well as odor; it is a sign of breakdown, so that the renewal of the paraffin has an effect, if the paraffin bath—
>
> Q. * * * If you recoat that paraffin, you will cover the odor?
>
> A. No.
>
> Q. What do you mean by renewal of paraffin?

A. By changing the paraffin in the bath, cleaning the tank out and putting the thing through a spraying process, and you cannot detect any possible breakdown, but if you allow it to go two or three weeks and don't change it, it becomes in that condition and—

Q. That is in addition to the temperature?

A. Yes, sir" (R. 303-4).

Thus the temperature of the paraffin bath and the length of time for which the paraffin is heated are factors involved in creating an off-odor and an off-color to the paraffin on the container.

Respondent's witness Keyser testified that oxidation of paraffin will begin at relatively low temperatures and that there will be no appreciable oxidation below the melting point of the wax (in this case about 125° F.). He also testified that the nature of the products of oxidation is acid (R. 1347-8).

Respondent's witness Peterson testified that the oxidation of paraffin gives it a rancid odor (R. 950). Although his testimony differed from Keyser's about the temperature at which paraffin oxidizes, his testimony shows that there is no way of determining for how long a period the paraffin in the bath is heated (R. 950-51). Paraffin is fed to the machine as needed and, no matter how quickly paraffin is used up in coating the containers, the paraffin put in last may be used first with the result that some paraffin may remain in the bath for long periods of time. The same paraffin may remain in the bath from day to day, because the paraffin removed from the machine at the end of the day is kept and used the next day (R. 961). According to Peterson's testimony, even a fresh paraffin bath has "a distinctive sweet paraffin odor," though "very mild" (R. 951).

Another source of odor in paraffin containers is bacteria. The witness called by the master, Dr. Rice, testified that he conducted tests with respect to a paper container which were designed to reveal the bacteria present in the container which might be transmitted to the fluid put into the container (R. 418-9). His test indicated three containers with a bacterial count of less than 1,000 colonies per container out of 23 samples, and five containers with a count of 1,000 per container. Thirteen of the containers had bacterial counts above 1,000 per container ranging up to 26,000 colonies. He described the odors emitted from the bacterial colonies contained in the paper. Those odors ran the gamut from "stale" "fishy," "musty," "wet dog," to "foul," "fecal," and "putrid" (R. 416-9).

On this issue the master found that the City Council, in prohibiting paper containers, may have taken into consideration the following: "the possibility of rancid odors from oxidized paraffin being imparted to the milk," "the so-called sweet odors of pure paraffin," and "the possibility of objectionable odors from large counts of bacteria in the paper getting into the milk" (R. 1725-26).

It is not palpably unreasonable and arbitrary to prohibit the delivery of milk in containers that impart an odor to the milk.

5. Effective sanitary control of paper containers requires supervision and control of all processes in the manufacture of paper and its conversion into containers.

The testimony of respondent's witnesses shows the necessity of inspection by health officials of all processes in the making of the paper container. Since the glass container can be effectively sterilized at the dairy when it is being filled with milk (Sanborn, R. 169), there is no need to in-

spect any aspect of the glass container before the cleaning process at the dairy. The only possible sterilizing action on the paper container at the dairy is the accidental fact that the container is immersed in hot paraffin to give it a coating. Paraffined paper milk containers are absorbent; they cannot be effectively sterilized at the dairy before they are filled with milk. As a result, effective control of the sanitary quality of paper containers requires supervision and inspection of all the many processes of manufacture and all the various materials used in making paper containers. This means that inspectors must be sent from the place of milk distribution to numerous paper mills and converting plants throughout the country.

The two methods commonly used to test the bacterial content of paper containers cannot be safely relied on by local health officers. The rinse test determines only the number of bacteria on the inside surface of the container, giving no indication of the bacterial condition of the walls of the container. The disintegration test is not reliable for several reasons. The bacterial condition of paper is not uniform. For example, paper easily acquires "slime spots" and "brownish patches" during the process of manufacture, and these small areas are likely to have a higher bacterial content than other portions of the board (R. 721, 738). While all testing is necessarily done by the sampling method, on the theory of probabilities, tests obviously became haphazard when there are likely to be great variations in the material tested (see Prucha, R. 736-9).

The unreliability of rinse and disintegration tests to indicate the sanitary conditions in the manufacture of paper containers is also shown by the testimony of respondent's witness Sanborn. He testified that rinse tests conducted to determine the bacterial condition of the finished container are apt to be misleading without knowledge and control of

the bacterial condition of the board (R. 255-6). And he testified also that while disintegration tests could be an index to the sanitary condition of manufacture in a paper mill, he did not think it advisable, from a sanitary or public health point of view, to rely alone upon disintegration tests to determine the sanitary quality of the paper board (R. 232-3).

As for the need of inspection, Dr. Sanborn testified that the sanitary condition of paper mills is dependent upon numerous factors. These factors and the sanitary condition of the paper mill and its products vary from mill to mill and within the same mill from week to week, from day to day, and from hour to hour. Determination of these factors involves inspection of the mills (R. 209-21). Dr. Sanborn also testified that it is more expensive for a paper mill to produce paper of a high sanitary quality than to produce paper of a low sanitary quality and that only economic factors prevent paper mills now engaged in making other products from producing paper board for milk containers (R. 234-42).

Respondent's witness Prucha said in his October, 1937, address to the International Association of Milk Sanitarians:

> "Milk sanitarians should inspect paper mills and check on the pulp. In the first place, the water used for diluting the pulp usually comes from polluted streams or lakes. Some paper mills have proper sanitary control over the water supply while other paper mills have not.
>
> * * * * * *
>
> "Where paper is made for milk containers some medical examination of the worker handling and packing the paper should be required. Some mills have such standards. Occasional inspection of the premises and of the bundles of the paper are desirable. The Chicago Carton Company, where the containers are

> cut and printed, was found in an excellent sanitary condition. If paper containers become extensively used, such an establishment should be visited and inspected by milk sanitarians." (Plaintiff's Exhibit 62, R. 1593-4.)

In his testimony Dr. Prucha said that some certifying agency might be set up to avoid the necessity of making visits to the mills by local health officers (R. 731), although he did not know any other instance where an inspection device of that kind had been used (R. 734). He testified unequivocally that some inspection or certification should be made (R. 733-4).

The need for control and inspection of paper mills is also shown by testimony about the need of sanitary standards in paper manufacture. Dr. Sanborn stated (R. 244-5) that in his opinion, in the interest of public health, standards governing the production of paper board for use in paper milk containers and governing the subsequent processing and handling of that paper board until the container is filled with milk should be formulated, adopted, and enforced by public health authorities. Unless inspection is to be made, the formulation of standards is obviously meaningless. Without inspection, there can be no enforcement.

It is significant that the United States Public Health Service, when amending its model ordinance to permit the use of paper containers, recommended the adoption of regulations *which require inspection of paper mills and of converting or fabrication plants.* Plaintiff's exhibit 61 contains the regulations suggested by the Health Service advisory board in June, 1939. Included were the following:

> "(5) The manufacture, packing, transportation and handling of single-service containers and container caps and covers are conducted in accordance with the following requirements. *Inspections required herein*

may be made by the health officer or by any agency authorized by him. • • •

"(c) All operations at the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13p, 14p, and 15p" (R. 1590-1).

There is no "agency authorized" by health officers to inspect paper mills and fabrication plants (Prucha, R. 734). And obviously inspection is required by health officers to see that regulations of the kind quoted are complied with. As a result, inspection of the manufacture of the container requires visits to paper mills by health officers, and inspection of the converting process requires trips to converting plants.

The unreliability of rinse and disintegration tests is indicated by the fact that *tests alone are not relied upon today* in Chicago in supervising the milk supply.

This is shown in the record. While the ordinance (sec. 3092, R. 40) requires that samples of milk be taken and tested bacteriologically, it also (sec. 3091, R. 39) requires the Board of Health to inspect dairy farms and milk plants whose milk is intended for consumption in Chicago. There are elaborate regulations of the Board of Health governing all aspects of milk production from the health of the cow to the vehicles used in making delivery to the consumer (see, for example, items 1r to 26r and items 1p to 23p, R. 45-108). The "public health reasons" noted under section 3092 state expressly that a low bacterial count "does not necessarily mean that diseased organisms are absent" (R. 41). Similarly in supervising the use of glass containers, the Board of Health does not rely alone on the rinse test or any other test. There are regulations about the cleaning and bactericidal treatment of containers (item 12p,

R. 87), including requirements for the method of sterilization, the caustic alkali content of the solution used, etc. (R. 89-90). Also inspections are made regularly ("once or twice a week, but at least every two," R. 970) of bottling establishments, including the operation of the washing equipment, the temperatures of the solutions used, etc. (R. 971-2). The rinse test is made of samples taken at various intervals approximately one month apart (R. 972). Thus, although the making of rinse tests is a standard method of supervision, this method alone is not deemed sufficient. The fact that only 1400 bottles are tested per year in Chicago does not show inadequate supervision because this is only one of the control devices used. In the regulation of milk all possible precautions are taken. Bacterial counts are not considered enough.

Similarly bacterial counts of paper containers are not considered enough. Tests should be coupled with inspection of every possible aspect of the manufacture of the container. The respondent's witness Dr. Sanborn wrote:

> "Bacteriological counts obtained thus far on various grades of paper are, however, only preliminary in that they do not adequately reveal the influence of changing mill conditions throughout the year" (R. 1513). "Without intimate knowledge and control of boards used, results of rinse tests may be inconsistent and misleading" (R. 1543).

So is explained his testimony that a disintegration test of the respondent's container gives an index of its sanitary condition (R. 266-7, 301). It may be that respondent's container was manufactured in a sanitary manner at the time of the trial. The evidence shows that it is made of virgin spruce pulp, that the water at the mill is chlorinated (the necessity for this is shown by the fact that the water contains coli bacteria, R. 513), that the paper is carefully

wrapped, that nontoxic adhesives are used, that the employees at the converting plant are examined medically, that sanitary precautions are taken during the various steps in manufacture, etc. Will the makers of this container continue these precautions and do the makers of other containers observe these precautions? This can be determined only by inspection. Periodical tests alone (even assuming that the disintegration test is as effective for paper containers as the rinse test is for glass) are no more sufficient in the case of a paper container than the rinse test in the case of glass. Inspections of the paper manufacturing operations are just as necessary as inspections of bottling equipment, the content of the alkali solution, etc.

Also, if it is assumed that paraffining has *some* bactericidal effect, the paraffining process should be inspected. Unlike respondent's container, there are types of paper containers that are not paraffined at the dairy (R. 906). Where this process takes place is not shown by the record. The paraffining process cannot be inspected and controlled by Chicago's health officers in the case of paper containers paraffined at far-distant places.

The petitioner's position on this point is completely supported by the case of *McKenna* v. *City of Galveston*, 113 S. W. 2d 606 (Court of Civil Appeals of Texas, 1938).

The plaintiff in that case sought to enjoin the enforcement of an ordinance requiring that ice cream be pasteurized and frozen upon the same premises in the city. The plaintiff bought ice cream mix in Houston where it was pasteurized, transported it to Galveston in refrigerated trucks, and used it there in the manufacture of ice cream. The plaintiff called numerous expert witnesses and the defendant city apparently called none. The trial court entered judgment

for the city and this was affirmed on appeal. There was much in the testimony about the necessity of inspection, including the following (p. 609):

> "'"• • • Pasteurization is the only method of ridding milk and milk-products from pathogenic germs that has come into general practice. As to what practical means there are for a health officer to determine whether or not milk has been properly pasteurized, the only method that can be employed for that purpose is by inspections of the apparatus used, the persons handling the milk, and the process employed at the particular plant where the pasteurization is done. • • •"'
>
> "'Dr. Stephenson testified: "Bacteria-count doesn't show whether or not the bacteria contain pathogenic-germs. As a practical matter, it is necessary in addition to taking proper samples and making bacteria-counts with reference to milk-products to take measures to see that milk is handled under proper sanitary conditions. It would not be safe simply as a health-measure to take samples of bacteria without taking other measures relating to the premises where the milk is produced, the manner, the utensils used, and the persons handling it. So, an inspection of the premises is a matter of considerable importance in insuring a safe milk supply."'
>
> "'"• • • Bacteria-count will not necessarily disclose the presence or absence of pathogenic-germs. Witness wouldn't say that it would be safe to rely upon bacteria-count, without some knowledge of the premises and handling of the product. The bacteria-count would have to be supplemented by inspection of the premises upon which the milk was produced."' '"

The court adopted in its opinion the following language from the city's brief (p. 610):

> "'• • • While some of the expert witnesses expressed the opinion that there would be no danger to the health of the city's inhabitants from ice cream frozen and pasteurized in Houston and brought to Galveston, those opinions in each instance were given

upon the assumption that the requisite care was to be taken in the pasteurizing, transporting, and handling of the product. They all agreed that each time it was handled an additional risk arose. The evidence makes clear that all possible safeguards taken in the pasteurization and handling of the ice cream mix at Houston and in its transportation to Galveston could possibly be set at naught by the manner in which it was handled by appellant after he received it. The evidence likewise makes it clear, and all the expert witnesses agree, that any practical measures relative to safeguarding milk and ice cream from infectious bacteria should include proper inspections of the premises where it is produced, handled, and pasteurized, and of all persons engaged in handling it. To make that practicable for the appellee city's health department to do, and to insure that the effects of pasteurization should not be endangered by unrestricted handling of the products after it is pasteurized, is what the ordinance plainly is designed to accomplish.'

"'That being true, it would clearly seem that the ordinance is not one of which there is a clear want of need, or that its unreasonableness so clearly appears that it can by the court be declared an arbitrary measure evidencing an abuse of discretion on the part of the governing body of the city.' "

A similar case is *Gilchrist Drug Co.* v. *City of Birmingham*, 234 Ala. 204, 174 So. 609 (1937). There the plaintiff, the operator of a drug store, sought to enjoin an ordinance requiring the manufacture of ice cream by the "pasteurized continuous flow method." The plaintiff used a new device, called a "counter freezer," for which he bought ice cream mix from Kentucky in large sealed cans; the mix was used in the counter freezer as needed. By the method required by the ordinance the mix was made in Birmingham and was required to flow immediately into the freezing apparatus after pasteurization. The mix used by the plaintiff was pasteurized in Kentucky when made, but was not pasteurized again by him. The trial court dismissed the com-

plaint and this was affirmed on appeal. The opinion (p. 610) noted that the counter freezer method for the manufacture of ice cream was a modern invention introduced into the state four or five years before. A large number were being operated in the state. The opinion noted at the same page that the ordinance in question was adopted before the counter freezer method was introduced and bears no relation to it. Of the desirability of preventive health measures, the opinion said (p. 612):

> "Rapid advance has been made in the science of medicine and, in the field of bacteriology. That the health and welfare of the people have been greatly advanced by the conscientious and intelligent labor of the scientists and members of the medical profession cannot now be open to question. Their labors are not to be restricted to curing disease and alleviating suffering, however important these may be, but the greater benefits are to be realized by the use of preventive means in anticipation of the danger of an epidemic. And it is fully as important that the health authorities should anticipate danger to public health, and provide against them, as it is to take steps to eradicate conditions after the disease has appeared."

The respondents do not contend that the methods of controlling glass containers are perfect, or that paper containers may be prohibited merely because possible methods of control fall short of perfection. The point is that the basic and essential public health techniques used in controlling glass containers cannot be applied with equal effectiveness and practicability to paper containers. Not only are the methods of testing, inspecting, and regulating different with the two containers, but the possible extent of supervision differs in that the glass container can be controlled locally while the paper container can be controlled only by making trips to distant places.

These differences in methods of control, although here they clearly justify (and indeed seem to require) the prohibition of paper containers, are in any event matters for the discretion of the legislative body. *South Carolina State Highway Department* v. *Barnwell Bros.*, 303 U. S. 177 (1936). And the case often cited by the petitioners, *Koy* v. *City of Chicago*, 263 Ill. 122 (1914), is closely applicable on this point. In that case, the ordinance required that a recording device should be attached to milk pasteurizers and that the records kept by the device should be under lock and key in the control of the commissioner of health. The plaintiff attacked the device required as impracticable and subject to manipulation by dealers and argued that the method of inspection required was not effective. After noting these contentions of the plaintiff, the opinion of the Illinois Supreme Court continued (p. 133):

> "These are questions of judgment and discretion, the determination of which must be left to the legislative department. If the apparatus should not record the temperature accurately at all times or should not indicate the length of time the temperature was maintained, or if it can be manipulated so as not to show an accurate record, these are matters for the city council to consider. *Courts cannot overrule the determination by the city council that a particular method of protecting the public health should be adopted unless it is so clearly and manifestly wrong that there can be no doubt about it.* A personal inspection of all milk sold in the city would be manifestly a requirement difficult, if not impossible, to carry out. Even though the recording apparatus may be manipulated by a dishonest dealer so as to show an untrue record, the city council may have thought its use better for the protection of the public than a system by which no record was preserved but the health officers were compelled to rely wholly upon the dealer, and we cannot say that they were clearly and unmistakably wrong. * * *" (Italics added.)

It is not unreasonable to require the use of a container whose sanitary condition may be controlled effectively by supervision at the dairy when it is filled with milk as opposed to a container which requires constant inspection of manufacture and processing in remote areas to insure effective sanitary control.

6. Paper containers are not transparent and cream does not rise to the top in them.

There are several public health aspects to the use of transparent containers. The purchaser can of course see that there are no dirty particles in the milk. But there is a more important health problem. The Chicago ordinance requires milk to have a certain butter-fat content. (See sec. 3082(A) for definition of milk, requiring milk to contain not less than 3¼% of milk-fat and sec. 3082(B) indicating that milk-fat and butter-fat are the same thing, R. 26) The requirement of a minimum butter-fat content is a health regulation, for the food value of milk depends on the proper amount of butter-fat. (See "public health reasons" under definition of milk, R. 26.) The cream line in a transparent bottle tells every purchaser its butter-fat content and every purchaser is in a sense an inspector. With this factor absent in paper containers, the city health officials will be required to make more extensive tests of the butter-fat content of the milk than they are required to do with glass containers. This factor alone would seem, under the decision in *Pacific States Box and Basket Co.* v. *White,* 296 U. S. 176 (1935), to be a sufficient justification for the exclusion of the non-transparent container. In the paper container the butter-fat content of the milk can be determined only by a "Babcock test" or by chemical analysis (R. 503-4, Tracy).

Not only is the cream line not visible in a paper container; in addition, milk in paper containers undergoes some unexplained process—chemical, physical or electrical—which so affects the milk that the cream is prevented from rising to the top of the container as it normally does in containers other than paper (R. 503-4). None of the respondent's witnesses advanced any explanation for this alteration of one of the normal characteristics of milk caused by paper containers. This strange phenomenon is alone a ground for caution in the use of a container for an easily-contaminated liquid that is a staple item in the diet of infants. This unknown factor *may* present a health problem in view of the absence of any evidence of the reason for it. The matter is thus within the discretion of the legislative body.

Koy v *City of Chicago*, 263 Ill. 122 (1914), indicates that these characteristics of paper milk containers justify their prohibition. As said in the opinion in that case (p. 131):

> "Not only may laws and ordinances require that milk offered for sale shall be pure, wholesome, and free from bacilli of any disease, but they may and do, in order to produce this result, prescribe the manner in which such purity, wholesomeness, and freedom from disease shall be secured and made to appear."

So the master found (R. 1730):

> "It may well be a legislative matter whether milk shall be sold in standard transparent glass milk bottles rather than in paper containers in order to protect the public health and to guarantee that milk sold contains the usual amount of cream."

The City of Chicago has the right to require the use of a milk container that is transparent and that does not interfere with the ordinary physical characteristics of milk.

(c) Factors relied on by the District Court and in the majority opinion of the Circuit Court of Appeals are not controlling.

The opinion of the trial court and the majority opinion of the Circuit Court of Appeals both indicated that their authors believed that other factors in the case outweighed the evidence discussed above showing possible health hazards in the use of paper milk containers. A consideration of these other factors shows that they are not controlling here.

Weakness of presumption that ordinance is valid.

The cases cited above show in clear language that whoever attacks the validity of legislation has the burden of establishing its validity and that there is a strong presumption that legislation enacted under the police power is valid. The majority opinion of the Circuit Court of Appeals says that here the presumption "could be little more than a shadow" since the use of paper milk containers was in its incipient stage when the ordinance was enacted in 1935 so that the legislative body "could not, from the nature of things, have considered and weighed their advantages and disadvantages" (R. 1794). We submit that this ruling is not sound constitutional law.

The petitioners have never taken the position in this case that the reasonableness of the ordinance must be determined as of the time of its passage in 1935, for it is admitted that a law valid when passed may become invalid thereafter by reason of a change of conditions. This

is pointed out in the opinion of the Circuit Court of Appeals (R. 1789). But certainly this does not mean that there is no presumption of the validity of legislation that is attacked on the ground that it became unreasonable after its enactment. Since the question of reasonableness is determined in the light of conditions exisiting today, we are not concerned here with what the City Council actually did consider before it enacted the ordinance, but with what it might reasonably have considered assuming conditions to have been as they are today or, rather, with what it might reasonably consider today in the light of today's conditions. For this reason the presumption of validity is just as strong as if the ordinance had been passed today or as if today's conditions existed when the ordinance was passed.

The holding of the Circuit Court of Appeals would give courts a much greater latitude in invalidating legislation which affects conditions that come into existence after its enactment. The presumption of validity arises upon the enactment of the legislation. Obviously the strength of the presumption is not impaired by advancing age.

Use of paper milk containers elsewhere.

There is much evidence in the record about the use of paper containers for distributing milk in municipalities other than Chicago. The trial judge in his opinion placed much reliance on this evidence, as well as on the absence of evidence tracing "serious disease or minor ailment" to the use of paper containers (R. 1753). Likewise the majority opinion of the Circuit Court of Appeals emphasized that the use of paper containers "has been authorized and permitted by more than 200 cities and villages in the United States, including such cities as Washington, D. C.,

New York and Philadelphia, as well as practically all of the cities and villages near and adjacent to the City of Chicago" (R. 1794).

These factors have no bearing on the validity of the Chicago ordinance under the cases cited above. At the hearing before the master the petitioners objected (R. 148) to the introduction of evidence of the use of paper milk containers in other municipalities if this evidence was to be considered on the question of the reasonableness of the ordinance. Obviously the use of the containers elsewhere has no factual bearing on the case unless accompanied by evidence that municipalities not prohibiting them considered carefully the public health hazards involved. As shown below, the slight evidence in the record about the precautions taken in a few municipalities shows that the precautions were very inadequate.

The question of the reasonableness of the ordinance must be determined by the evidence about the sanitary qualities of the paper container and not by a roll call that arrays on one side the municipalities not prohibiting its use and on the other side the municipalities prohibiting its use. Evidence of permission in one municipality or state cannot affect the validity of a prohibition in another municipality or state. The fact, for example, that Chicago may permit automobiles bearing loud speakers to tour the streets would afford no basis for an attack upon an ordinance of New York City prohibiting the use of those devices in congested areas. So the fact that other states did not limit the weight of motor trucks using their highways would not affect the validity of the Texas statute prescribing limitations of weight, *Sproles* v. *Binford*, 286 U. S. 374 (1931). The fact that Illinois has not seen fit to require compulsory vaccination could not affect the validity

of a Massachusetts statute requiring compulsory vaccination, *Jacobson* v. *Massachusetts*, 197 U. S. 11 (1904). Oregon's regulations concerning fruit containers are not invalid because they prohibit the use of containers permitted elsewhere, *Pacific States Box and Basket Co.* v. *White*, 296 U. S. 176 (1935). Instances could readily be multiplied.

Also, the ordinance may not be held unreasonable because no instance of contagion or death resulting from the use of paper containers has been proved by the petitioners. The exercise of police power for the protection of the public health is not conditioned upon the prior occurrence of disease and death. A future hazard is as strong a justification for the exercise of the power as is a prior disaster. An antecedent outbreak of amoebic dysentery, for example, is not an essential condition to the exercise of the city's power to eliminate sources of danger in plumbing systems. So, here, the city's power to protect itself from hazards to public health which it believes are inherent in the use of respondent's containers exists regardless of whether or not their use elsewhere has resulted in disaster. The respondent's witness, Packer, testified in his deposition that it was impossible to trace cases of contagion to a single-service container (R. 1374-5). As a result the lack of evidence of specific cases of illness attributable to the use of these containers is in fact of no significance.

From the testimony of the respondent's witness, Packer, it is also apparent that the consumers of milk have been used in many municipalities as experimental media for the determination of the sanitary quality of paper containers. Packer testified in substance (R. 1368-9) that regulations governing the handling of paper containers are necessary; that no regulations exist in the City of Philadelphia, although regulations were being formulated at the time of

the taking of his deposition (1939). He further testified that regulations were as necessary in 1929 when the use of paper containers was first permitted in Philadelphia as they are now, but that regulations were not then formulated because nobody knew what the regulations ought to be—"somebody had to pioneer" (R. 1370).

The principal witness for the respondent, Dr. John R. Sanborn, testified that in his opinion, in the interest of public health, standards should be formulated and adopted by public health authorities governing the production of paper board for use in paper milk containers and governing also the subsequent processing and handling of the paper board until the container is filled with milk. He further testified that he had attempted to ascertain what cities had adopted regulations with respect to paper containers and that so far as he knew no cities other than Baltimore, Maryland and Reading, Pennsylvania had adopted any regulations. In his opinion neither the Baltimore nor the Reading regulations were satisfactory (R. 244-7).

In this state of the record the fact that paper containers are used for the distribution of milk in some municipalities other than Chicago proves nothing with respect to the unreasonableness of prohibiting paper milk containers in Chicago.

Reliance upon experience elsewhere was rejected in *Standard Oil Company* v. *City of Marysville*, 279 U. S. 582 (1928), which involved an ordinance requiring the storage of gasoline below ground. The court said (p. 586):

> "The facts that the tanks of petitioners within the city limits have been operated successfully above ground; that appliances used by them are of the best type; that fires in connection with their many tanks located elsewhere have been relatively infrequent, and numerous others found by the master, were properly

for the consideration of the city council in determining whether the ordinance should be enacted, but they fall far short of withdrawing the subject from legislative determination or establishing that the decision made was arbitrary or unreasonable. * * *

"We may not test in the balances of judicial review the weight and sufficiency of the facts to sustain the conclusion of the legislative body, nor may we set aside the ordinance because compliance with it is burdensome. * * *"

Regulation of paper milk containers by the State of Illinois.

Another factor noted by the majority opinion of the Circuit Court of Appeals is that "the legislature of the State of Illinois and its Department of Health have approved the use of such containers since 1939" (R. 1794). As we have pointed out in Point I of this brief, the State of Illinois in regulating paper containers used in distributing pasteurized milk provided expressly in the 1939 statute that cities could regulate further. Also, the recognition of the use of paper milk containers by the state is merely another instance of their use elsewhere. This factor, as we have just explained, is immaterial in fact and in law.

Regulation of paper milk containers in model ordinance of United States Public Health Service.

Another element emphasized by the majority opinion of the Circuit Court of Appeals is "the fact that the United States Public Health Service, whose model ordinance has been widely adopted by cities throughout the United States, including the City of Chicago, amended its ordinance in 1939, so as to include the regulation of single-service containers" (R. 1794).

We note briefly the facts involved. The United States Public Health Service, which performs advisory functions

only as to municipal milk regulations (R. 609), has prepared a model ordinance and code of regulations, both of which the City of Chicago follows substantially (R. 1065). While this case was pending before the master, section 10 of the Health Service's model ordinance was amended to provide that milk may be delivered in single-service containers (defendants' exhibit 17, R. 980, R. 1678-79). At the time when this amendment was made, the Health Service also added provisions to its model code of regulations providing for the regulation of single-service containers.

These regulations,* as we have noted above (p. 59), require public health officials to inspect the paper mills and converting or fabrication plants in which the various processes in the manufacture of paper milk containers take place. The regulations say that the inspections may be made "by the health officer or by any agency authorized by him." The paper mills and converting plants where paper containers are made are located in various parts of the country—e. g., at the time of the trial the paper in the respondent's container was made in the West Virginia mill of the Cherry River Paper Company (R. 164) and the paper was converted into the containers by another manufacturer at Middleton, Ohio (R. 198). The inspection of the manufacturing of the respondent's container would thus require Chicago health officials to travel to West Virginia and Ohio; and there are other types of

* The Model Code of Regulations of the United States Public Health Service also contained a statement about the characteristics of paper milk containers which shows that their prohibition is not unreasonable:

> "The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a non-absorbent non-flaking surface" (plaintiff's exhibit 61, R. 1591).

containers for which the paper is made and fabricated in many other states (see map, R. 1479). Also there is no "agency authorized" by health officers to inspect paper mills and fabrication plants (Prucha, R. 1734).

In contrast with the expensive devices suggested by the regulations of the Health Service for the supervision of paper milk containers, the sanitary quality of the glass containers which the Chicago ordinance requires may be supervised locally. Since the glass container can be effectively sterilized at the dairy when it is being filled with milk (Sanborn, R. 169), there is no need to inspect any aspect of the glass container before the cleaning process at the dairy. Not only are glass containers absolutely sterile when manufactured (R. 169), they receive bactericidal treatment before each use and with the best method of sterilization it is possible to obtain a sterile glass bottle "according to bacteriological tests" (R. 170). The bactericidal treatment at the local dairy can be thoroughly inspected and controlled locally. In Chicago this control consists of regular inspections of the cleaning process, including the operation of the washing equipment, the temperatures of the solutions used, the bottling equipment, etc. (R. 970-72). Also occasional tests are made locally of the bacterial content of sample bottles (R. 972).

Instead of permitting the use of paper milk containers, the proper regulation of which requires inspection of manufacturing processes at far-distant places, the Chicago City Council requires the use of glass containers which may be (and are) inspected locally. This is not an unreasonable legislative determination, even though the model ordinance of the United States Public Health Service permits both glass and paper milk containers.

Use of paper containers for other purposes.

In holding that the ordinance was void if it forbade the use of paper milk containers, the trial judge placed great reliance on evidence about other uses of paper containers in Chicago (opinion, R. 1752). Of one type of container, the opinion states that it is less meritorious in structure and design than respondent's and is in daily use in Chicago for the sale of milk, chocolate milk, ice cream, and other liquids by drug stores, hotels, restaurants, and soda fountains.* The other type, the opinion says, is in common use for cheese, butter, meat, drinks, and other edibles.

The record shows that the use of paper containers for purposes other than the delivery of fresh milk does not make the prohibition of the use of paper milk containers unreasonable or discriminatory. The petitioners introduced evidence showing that the characteristics of the other commodities sold in paper containers are such that from a public health point of view they are in nowise comparable to milk (R. 1094-95, R. 1171-73). This fact is also established in the record by the statement of the respondent's leading witness, Dr. John R. Sanborn:

> ". . . *milk is the most perishable and easily contaminated food that is placed in paper containers* . . ." (R. 1495).

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*The trial court did not point out that the sale in paper containers of such of these commodities as are milk products is forbidden by the Chicago Board of Health. The only evidence of the sale of milk in paper containers was testimony that attorneys employed by the respondent went to several drug stores and restaurants in Chicago and purchased milk in paper tumblers (R. 857-62, 891, 897). The clerks in these stores were violating a regulation of the Board of Health providing, "All milk and milk products shall be sold, served, or dispensed to the final consumer only in unopened, original containers as received from the distributor" (defendants' exhibit 26, R. 1697). Obviously a violation of this regulation does not show that there are no health hazards in the use of paper milk containers. The master so indicated in his report (R. 1731).

Proposal by Chicago Board of Health that City Council permit use of paper milk containers.

The majority opinion of the Circuit Court of Appeals emphasizes the fact that the Chicago Board of Health recommended to the Chicago City Council that the ordinance be changed in accordance with the amendment to the model ordinance of the United States Public Health Service. The proposal was made on October 16, 1939 while this case was being heard by the master. In making its recommendation for the change in the ordinance, the Chicago Board of Health also recommended that the regulations of the United States Public Health Service be adopted (R. 1698-99). As we have noted, the regulations of the Health Service require health officials to inspect paper milk containers while in the process of manufacture and this inspection must be made in far-distant places. Clearly it is not unreasonable on the part of the Chicago City Council to disregard the recommendation of the Board of Health that paper milk containers be permitted when the regulation of the recommended containers would require local health officers to make expensive inspection trips to the paper mills and converting plants.

* * * * * *

We submit that the factors considered by the trial court and the majority of the judges of the Circuit Court of Appeals to prove the ordinance to be unreasonable are not determinative of the question of the validity of the ordinance under the fourteenth ammendment. Unless the wisdom and propriety of the ordinance are to be determined by the courts, the controlling factor is what was admitted in the majority opinion of the Circuit Court of Appeals: "the record discloses some evidence . . . that the use of such containers presents a hazard to health" (R. 1794).

The prohibition of the use of paper milk containers may be held unreasonable only if it is "so unrelated in any way to any possible danger to public health that the enactment must be considered as a merely arbitrary interference with the property and liberty of the citizens" [*People* v. *Quality Provision Co.*, 367 Ill. 610, 614 (1938), quoting from Mr. Justice Hughes in *Price* v. *Illinois*, 238 U. S. 446, 451-452 (1915)]. The evidence shows that the ordinance is not unreasonable. The holding of the trial court and the pronouncement of the Circuit Court of Appeals that the ordinance is unreasonable were based on an erroneous conception of the applicable principles of constitutional law.

CONCLUSION.

The petitioners respectfully urge this court to reverse the judgment of the Circuit Court of Appeals.

CITY OF CHICAGO, *a Municipal Corporation*,
BOARD OF HEALTH OF THE CITY OF CHICAGO,
DR. ROBERT A. BLACK, *Health Commissioner and Acting President of Board of Health of the City of Chicago*,

Petitioners,

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APPENDIX A.

ILLINOIS MILK PASTEURIZATION PLANT LAW.

Enacted by the 61st General Assembly,

Approved July 24, 1939.

(Laws of Illinois, 1939, pp. 660-666; Ill. Rev. Stat., 1941, Chap. 56½, Secs. 115-134.)

AN ACT *regulating the handling, processing, labeling, sale and distribution of pasteurized milk and pasteurized milk products.*

SECTION 1. The words and phrases herein defined are used in the sense given them in the following definitions:

(a) The terms "pasteurization," "pasteurized" and similar terms shall be taken to refer to (1) the process of heating every particle of milk or milk products to at least 143° F., and holding at such temperature for at least 30 minutes; or (2) heating every particle of milk to at least 160° F., and holding at such temperature for at least 15 seconds; either method shall be carried out in apparatus approved by the Department and properly operated; provided that nothing in this definition shall be considered as disbarring any other process which has been demonstrated to be equally efficient and is approved by the Department.

(b) "Department" means the State Department of Public Health.

(c) "Director" means the Director of the Department of Public Health.

(d) "Person" includes an individual, aggregation of individuals, corporation, association and partnership.

(e) "Certificate of Approval" or "Certificate" means a document awarded to the owner or operator of a pasteurization plant for compliance with the provisions of and under conditions set forth in this Act.

(f). "Pasteurized Milk Products" means and includes pasteurized cream, Vitamin "D" milk, soft curd milk,

homogenized milk, skimmed milk, buttermilk and milk beverages as defined in this Act.

1. Pasteurized cream is a portion of milk which contains not less than eighteen per cent milk fat.

2. Pasteurized Vitamin D milk is milk the Vitamin D content of which has been increased by a method and in an amount approved by the Director.

3. Pasteurized soft curd milk is milk the curd tension of which is comparable to human milk when tested by and in a manner approved by the Director.

4. Pasteurized homogenized milk is milk that has been mechanically treated in such manner as to alter its physical properties with particular reference to the condition and appearance of the fat globules, to such an extent that no visible cream separation occurs after 48 hours storage and fat tests of the milk at the top and bottom of a quart bottle do not show a difference in fat percentage exceeding two-tenths of one per cent (0.2%).

5. Pasteurized skimmed milk is milk from which a sufficient portion of milk fat has been removed to reduce its milk fat percentage to less than three per cent.

6. Buttermilk is the product resulting from the churning of pasteurized milk or cream, or from the souring or treatment by a lactic acid or other culture of milk, skimmed milk or reconstituted milk. It contains not less than eight per cent of milk solids-not-fat.

7. Pasteurized milk beverages shall mean a food compound consisting of milk, skimmed milk, cream or buttermilk as the case may be, to which has been added a syrup or flavor consisting of wholesome ingredients.

(g) "Pasteurization Plant" as used herein shall be taken to include the building, machinery, apparatus, and other equipment and appurtenances necessary and essential in the work of pasteurizing milk or milk products, tanks and other equipment essential to the storing or handling of the milk being held for pasteurization, the equipment, machinery, apparatus, and appurtenances for cooling the milk and milk products, and placing the milk and milk products in bottles or other suitable containers, and storing such bottles and containers following pasteurization.

(h) "Minimum Requirements" means the code formulated by the Director for interpretation and enforcement of this Act.

SECTION 2. Any person operating a pasteurization plant who distributes, delivers or sells pasteurized milk or pasteurized milk products for consumption in the State of Illinois shall annually make application to the Department for a Certificate of Approval.

SECTION 3. Any person who shall hereafter engage in operating a pasteurization plant for the purpose of distributing, delivering, or selling pasteurized milk or pasteurized milk products for consumption in the State of Illinois, shall before engaging in such business make application to the Department for a Certificate of Approval.

SECTION 4. Upon receipt of such application, the Department shall make an inspection of said pasteurization plant and in the event that the plant, equipment and methods of operation are found to comply with the provisions of this Act, the Director shall issue a Certificate of Approval upon payment of the required fee as herein provided.

SECTION 5. Any person contemplating the construction or remodeling of a pasteurization plant for which a Certificate of Approval is required by this Act shall submit plans, specifications and information relative thereto to the Department for review. The Director shall review such plans, specifications and information and shall advise in writing whether or not such proposed construction or remodeling complies with the requirements of this Act.

SECTION 6. Any person, operating a pasteurization plant or having made application for a Certificate of Approval for the operation of a pasteurization plant shall at any time allow the Department to inspect such plant and to take such samples as may be deemed necessary by said Department.

SECTION 7. All bottles, cans, packages and other containers enclosing milk or any milk product defined in this Act shall be plainly labeled or marked with (a) the name of the contents as given in the definitions in this Act; (b) the word "pasteurized" only in the event the contents have been pasteurized or heated within the scope of this Act; (c) the name and post office address of the plant in which the contents were pasteurized.

SECTION 8. All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized. It shall be unlawful for hotels, soda fountains, restaurants, grocery stores, milk depots, milk stations and similar establishments to sell or serve any pasteurized milk or milk products except in the original container in which it was placed at the point of pasteurization, provided that this requirement shall not apply to milk or milk products consumed on the premises which may be served from the original container or from a dispenser approved by the Department for such service. The sale or distribution of bulk, loose or dipped pasteurized milk or milk which has been heated within the purview of this Act is hereby prohibited.

SECTION 9. Any person selling, delivering or distributing milk or milk products in the State of Illinois who shall heat milk or milk products or subject milk or milk products to other treatment in an effort to make the milk or milk products safe for human consumption or to preserve its keeping qualities shall comply with the provisions of this Act.

SECTION 10. No person shall sell, deliver or distribute any milk or milk products which have been heated or subjected to any other treatment in an effort to make the milk or milk products safe for human consumption or to preserve its keeping qualities unless such milk or milk products have been heated or treated in compliance with the provisions of this Act.

SECTION 11. No milk or milk products sold, distributed or delivered in this State shall be heated or subjected to any other treatment in an effort to make it safe for human consumption or to preserve its keeping qualities unless such milk or milk products are processed in compliance with the provisions of this Act.

SECTION 12. No person selling, delivering or distributing milk or milk products shall sell or offer for sale milk or milk products with any word or words stating or indicating that the milk or milk products are pasteurized nor shall they indicate by any other means that the milk or milk products were pasteurized, until the Department has issued a Certificate of Approval for the pasteurization plant in which the milk or milk products were pasteurized.

SECTION 13. The sale or distribution of milk from a plant, the Certificate of Approval of which has been revoked is hereby prohibited.

SECTION 14. The Certificate of Approval fee shall be ten dollars ($10.00). Unless suspended or revoked by the Department, a certificate shall be good until January first of the year following the date of its issue, and subject to annual renewal upon payment of renewal fee of ten dollars ($10.00). Such renewal being subject to approval on reinspection or on information submitted by the owner or operator of a plant in answer to questions sent to the owner or operator by the Department, or both.

SECTION 15. Any pasteurization plant coming under the provisions of this Act shall conform with all of the following items of construction, equipment, maintenance and operation and in accordance with minimum requirements adopted by the Director for interpretation and enforcement of this Act.

ITEM 1. The floors of all rooms in which milk or milk products are handled or stored shall be constructed of concrete or other equally inpervious and easily cleaned material and shall be smooth, properly drained, provided with trapped drains, and kept clean.

ITEM 2. Walls and ceilings of rooms in which milk or milk products are handled or stored shall have a smooth, washable, light-colored surface and be kept clean. Ceilings shall have a minimum height of ten (10) feet.

ITEM 3. All openings into the outer air shall be effectively screened to prevent the access of flies. Doors shall be self-closing.

ITEM 4. All rooms shall be well lighted and ventilated.

ITEM 5. The various milk-plant operations shall be so located and conducted as to prevent any contamination of the milk or of the cleaned equipment. Pasteurized milk or pasteurized milk products shall not be permitted to come in contact with equipment with which unpasteurized milk or milk products have been in contact.

ITEM 6. Every milk plant shall be provided with toilet facilities. There shall be at least one room or vestibule not used for milk purposes between the toilet room and any

room in which milk or milk products, equipment of containers are handled or stored.

ITEM 7. The water supply shall be easily accessible, adequate and of a safe, sanitary quality.

ITEM 8. Convenient hand-washing facilities shall be provided, including warm running water, soap and sanitary towels.

ITEM 9. Only "sanitary milk piping" of a type which can be easily cleaned with a brush shall be used.

ITEM 10. All multi-use containers and equipment with which milk or milk products come in contact shall be constructed in such manner as to be easily cleaned and shall be kept in good repair. Single service containers, caps, gaskets and similar articles shall be manufactured and transported in a sanitary manner.

ITEM 11. All wastes shall be disposed of in conformity with the requirements of the Department.

ITEM 12. All milk and milk products containers and equipment shall be thoroughly cleaned after each usage. All multi-use containers shall be subjected to an approved bactericidal process after each cleaning and all equipment immediately before each usage. When empty and before being returned to a producer by a milk plant, each container shall be effectively cleaned and subjected to bactericidal treatment.

ITEM 13. After bactericidal treatment, all bottles, cans, and other milk or milk products containers shall be stored in such manner as to be protected from contamination.

ITEM 14. Between bactericidal treatment and usage, containers and apparatus shall not be handled in such manner as to permit any part of the person or clothing to come in contact with any surface with which milk or milk products come in contact.

ITEM 15. Milk bottle caps and parchment paper for milk cans shall be purchased and stored only in sanitary tubes and cartons respectively, and shall be kept therein until used.

ITEM 16. Pasteurization shall be performed as described in Section 1 of this Act. All pasteurizers shall be equipped with such temperature indicating and recording instru-

ments and such accessory equipment as may be specified in the minimum requirements.

ITEM 17. All milk received for pasteurization but not pasteurized within two hours after it is received at the plant shall then be immediately cooled in equipment approved by the Department to a temperature of 50° F., or less, and maintained thereat until pasteurized; and all pasteurized milk and milk products shall be immediately cooled to an average temperature of 50°F., or less and maintained thereat until delivery.

ITEM 18. Bottling or packaging of milk and milk products shall be done at the place of pasteurization by approved mechanical equipment.

ITEM 19. Overflow milk or milk products shall not be sold for human consumption.

ITEM 20. Capping of milk and milk products shall be done by automatic machinery approved by the Department. Hand capping is prohibited.

ITEM 21. Every person connected with a pasteurization plant whose work brings him in contact with the production, handling, storage, or transportation of milk, milk products, containers or equipment, shall furnish such information, permit such physical examinations, and submit such laboratory specimens as the Department may require for the purpose of determining freedom from infection.

ITEM 22. All persons coming in contact with milk, milk products, containers, or equipment shall wear clean outer garments and shall keep their hands clean at all times while thus engaged.

ITEM 23. All vehicles used for the transportation of pasteurized milk or milk products shall be so constructed and operated as to protect the milk or milk products from the sun and from contamination. Such vehicles shall be kept clean. The immediate surroundings of the milk plant shall be kept in a neat, clean, condition.

SECTION 16. The Department may either refuse to issue, or may refuse to renew, or may suspend, or may revoke any Certificate of Approval because of the violation of any of the provisions of this Act or for any of the following causes:

(a) Insanitary conditions of plant surroundings within the control of the plant management, insanitary methods

of handling milk, milk products or milk containers or equipment.

(b) Employment of careless, indifferent and inefficient personnel.

(c) Violation of any of the provisions of this Act or of the minimum requirements for interpretation and enforcement of the Act.

(d) Failure to display Certificate of Approval to the public at all times when such Certificate of Approval has been issued as provided in this Act.

(e) Displaying to the public any Certificate of Approval which has been suspended or revoked or which has expired.

The Department shall, before refusing to issue, suspending or revoking any Certificate, at least ten (10) days prior to date set for hearing, notify in writing the applicant or holder of such certificate of any charges made and shall afford such accused person an opportunity to be heard in person or by counsel in reference thereto. Such written notice may be served by delivery of the same personally to the accused person, or by registered mail to the place of business of the accused last theretofore known to the Department. At the time and place fixed in the notice, the Department shall proceed to hearing of the charges and the accused shall be accorded ample opportunity to present in person or by counsel, such statements, testimony, evidence and argument as may be pertinent to the charges or to any defense thereto.

At any time after suspension or revocation of any Certificate, the Department may restore it to the accused if the Department is satisfied that the accused will comply with the provisions of the Act.

SECTION 17. Any order or decision made, issued or executed by the director in connection with the refusal to issue or renew, suspension or revocation of a Certificate of Approval whereby any person or company deems himself or it to be aggrieved, shall be subject to review by the Circuit Court of Sangamon County. A petition for the review of the action of the Director objected to by such person or company shall be filed within thirty (30) days from the date of the service of a copy of the order or decision made by the Director upon such person or company. A copy of such petition for review as filed with and certi-

fied to by the clerk of such court shall be served upon the director within five (5) days after filing thereof. If such petition for review is not filed within said thirty (30) days the parties aggrieved shall be deemed to have waived the right to have the order or decision reviewed.

The Director shall within ten (10) days, unless the time be extended by order of court, after the service of the copy of the petition for review upon him, prepare and file with the clerk of said court a complete transcript of the record of the hearing, if any had before him, and a true copy of the order or decision, and certify to the same. The order or decision of the director shall be deemed *prima facie* to be correct and the cause shall be heard by the court as a civil case upon such transcript of the record. Merely technical irregularities in the procedure of the Director shall be disregarded and the burden of proof of questions in controversy shall rest upon the petitioner.

The said court shall have jurisdiction to affirm or set aside the order or decision of the director and to restrain the enforcement thereof.

Appeals from all final orders and judgments entered by the said court in reviewing the order and decision of Director may be taken by any party to the action as in other civil cases.

The commencement of proceedings to review the action of the Director under the provisions of this section shall not act as a stay of the Director's order or decision unless so ordered by the court upon due notice to the director.

SECTION 18. Any person violating any of the provisions of this Act shall be guilty of a misdemeanor and on conviction thereof shall be punished by a fine of not more than one hundred dollars ($100.00) for each day such violation continues or imprisonment in the county jail for not more than one year or both such fine and imprisonment.

SECTION 19. Nothing in this Act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk and pasteurized milk products, provided that such regulation not permit any person to violate any of the provisions of this Act.

SECTION 20. The Act entitled "An Act in relation to the pasteurization of milk", approved June 30, 1925, as amended June 29, 1935, is hereby repealed.

APPENDIX B.

Glossary of Technical Terms Frequently Used in Record.

B-coli, coli bacteria, see *coli*.

B-prodigiosus, prodigiosus bacteria, see *prodigiosus*.

broke, paper that has broken in manufacture at the mill and is put through the process again (R. 202, 7; 1068).

calender, the machine in a paper mill in which the paper is sprinkled with water and ironed to give it a smooth finish (R. 744, 1073).

chip, mixed waste papers from which paper is made (R. 202, 1069).

chloramine (sometimes misspelled *chlorarine* in the record), a germicide made of chlorine and ammonia used in paper mills (R. 218).

coli, a type of intestinal bacteria indicating faecal contamination (R. 383, 715).

disintegration test, pieces of paper board are cut and placed in sterile water, the paper is then beaten by a disintegrating machine, such as the apparatus in the photograph, R. 1523, and the water with the pulp suspended in it is then tested for its bacterial content (R. 175, 1537); designed to disclose the presence of bacteria in the paper board (R. 266).

offset, an impression made on the back of a sheet of paper by the printing on the sheet piled on top (R. 344).

pathogenic bacteria, disease-producing bacteria (R. 182).

prime stock, pulp made directly from wood (R. 199).

prodigiosus, a type of bacteria used often in bacterial tests because they form red colonies and can be detected without much technical difficulty (R. 1202).

rinse test, sterile water is introduced into a container and the walls of the container are rinsed with the water; the rinse water is taken out and the bacteria

counted (R. 186); the standard method for testing glass milk bottles (R. 486); designed to disclose the presence of surface bacteria (R. 265).

secondary stock, pulp or paper that is not prime; sometimes used to mean waste papers (R. 201).

scoring, in a converting plant the process of denting the portions of the paper to be bent when the container is formed (R. 313).

slime spot, a spot on paper caused by slime in the water or machinery at a paper mill (R. 215-7).

spore (sometimes misspelled *spoor* in the record), a seed that becomes bacteria, a dormant stage of bacteria (R. 285, 740).

trim, the cuttings left over after the fabrication of a paper product (R. 202, 1069).

virgin stock or pulp, pulp that has not previously been used for commercial purposes (R. 207).

waste papers, paper collected from offices, homes, etc., to be re-used by a mill in making fresh paper (R. 200).

white water, water in a paper mill that has been through the process and is re-used (R. 219).

APPENDIX C.

Summary of Testimony of Expert Witnesses.

(Within the confines of this brief it is impossible to give a complete account of the testimony of the expert witnesses, to state every opinion expressed, and to explain every experiment testified to. The following brief resumé of the more important expert testimony is therefore in the nature of a guide to the record.)

John R. Sanborn of Geneva, New York (testimony R. 144-305), plaintiff's witness, is a bacteriologist; graduate of Massachusetts State College, Doctor of Science and Philosophy; teacher of bacteriology at McGill University (1924-1928); research bacteriologist for International Paper Company (1929-1933) and Arthur D. Little, Inc. (1934-1936) investigating paper containers and wrappers for food; since February, 1937, in charge of investigation of paper containers at New York State Experiment Station, Geneva, New York, in employ of Cornell University (R. 144-6)—the fund for the investigation having been started by paper container manufacturers, including the Ex-Cell-O Corporation, the manufacturer of the machine that forms and fills respondent's container (R. 224-225); author of numerous articles, of which a number appear in the record (plaintiff's exhibit 4, R. 1401-14; plaintiff's exhibits 16, 17, 49, 21, 22; defendants' exhibit 2).

Dr. Sanborn testified about various aspects of paper milk containers, including the operation of paper mills (R. 164-6), sanitary factors in paper manufacture (R. 198-221), and tests made by him on paper and glass containers. In his personal experience he knew of no disease spread by single-service milk containers (R. 153-4) and there is a

higher degree of sterility in the paper container than in the glass bottle (R. 171); he stated that it was possible to obtain a sterile glass bottle with the best method of sterilization (R. 170). In his opinion, the absorption of milk he had found in paper containers was not detrimental to health or to the consumers of milk (R. 289-90) and he had not heard any objection from health officials about the amount of absorption (R. 286). In his opinion the paraffin in paper containers is not detrimental to the milk (R. 178) or dangerous to health (R. 295), and the first purpose of paraffin is to prevent leakage and a secondary purpose to act as a sterilizing agent, for which it is not effective (R. 194). In his opinion city health authorities where paper milk containers are permitted should have some method of supervision of sanitary conditions in paper mills (R. 209). In his opinion a disintegration test on respondent's container would give an index of the sanitary condition of the board and the sterility of the container (R. 266-7), and as long as the mill making respondent's container goes on as it has or unless some emergency arises, inspection of the mill is not necessary (R. 301). In his opinion it is "very often true" that some effort in addition to the disintegration test is necessary (R. 301).

Harry C. Fisher of Cincinnati (testimony R. 306-359, 534-546), respondent's witness, is a chemist, graduate of the University of Cincinnati; chief chemist of Gardner-Richardson Company. He testified about the processes in converting paper sheets into paper blank containers for milk (R. 307-16, 327-29, 332-38, 534-40) and to disintegration tests made by him on paper board (plaintiff's exhibit 39, R. 319-25, 1561-2). On cross-examination, he described spots on defendants' physical exhibits 3 (R. 332-43) and 4, 5, and 6 (R. 344-47, 352-54) and on plaintiff's physical exhibit 40 (R. 346-7, all of which are unparaffined blank con-

tainer forms. He described little particles of fibres and slivers at the edges of the blanks (R. 340-41, 356). He tore a blank to show that the ink spots did not go below the surface of the paper board (R. 355).

John W. Rice of Lewisburg, Pennsylvania (testimony, R. 378-440), a witness called by the master (R. 378), is a professor of bacteriology at Bucknell University; received a doctor's degree from Columbia University; has done research work on paper containers since 1931 (R. 378-9). He testified about two series of tests made by him as reported in two articles, one in 1934 on glass and paper containers, and one in 1937 on paper containers (R. 383 ff., 398-411, 414-32). In his opinion the principal sources of bacterial contamination of paper milk containers are the pulp and the water used in paper manufacture (R. 380). In his opinion paper containers have been produced "which compare very favorably with sterile glass bottles as a sanitary receptacle for milk" (R. 388). In his opinion paper milk containers are superior to the glass container because there is no chance to spread infectious disease organisms from household to household by a single-service container (R. 424). As a bacteriologist he was not satisfied with the present development of paper or glass milk containers (R. 385-6). His 1937 studies indicated that the inner or milk-contact surfaces of some paper containers tested were 93.9 per cent sterile (R. 396). In his opinion, if the paper board is free from bacteria, there is no health problem presented in the absorption of milk in a paper container (R. 412). His 1937 studies showed bacterial odors in the paper containers tested (R. 416-19).

Paul H. Tracy of Urbana, Illinois (testimony, R. 471-533), respondent's witness, is Professor of Dairy Manufacture at University of Illinois, graduate of University of Illinois with degrees of B.S., M.S., Ph.D.; has done research

work and published many articles on dairy products; in February, 1937, started studies of paper milk containers with Dr. Prucha; has visited paper mills (R. 471-3), his expenses being paid by the mills (R. 525); has done special work for respondent (R. 525). Dr. Tracy's department operates a dairy for retail customers to make teaching more practical, using three types of paper containers as well as glass bottles (R. 473-4), the Pure-Pak machine used having been transported and lent by the Ex-Cell-O Corporation (R. 526). Dr. Tracy testified to many tests performed by him on many aspects of paper milk containers and glass milk bottles (R. 493-8; plaintiff's exhibit 44, R. 494, 1565). In his experience he had not traced any disease to paraffin particles in milk in paper containers (R. 503). In his opinion the condition of the paper mills is a significant factor in the sanitary condition of the paper container (R. 512). He would not consider the chipping of paraffin in the milk or the bulging of the paper container to present a health problem (R. 529-30), nor the absorption of milk in the wall of the container (R. 531).

Howard Orvis (testimony, R. 567-606) of Winnetka, Illinois, respondent's witness, had been health officer for the Township of New Trier for twelve years when he testified (R. 567, 572). He testified to bacterial counts taken by rinse tests on milk in Pure-Pak containers from one dairy and on milk in glass containers from another dairy. He felt that the control he had over paper containers was equal to the control over glass bottles (R. 569-73). He was never in a paper mill (R. 573), and in his ten months' experience with paper milk containers had no occasion to think that it was necessary to go to the paper mill to guard the public health of Winnetka (R. 605).

Martin J. Prucha of Urbana, Illinois (testimony, R. 624-671, 700-839), respondent's witness, is a Professor at Uni-

versity of Illinois; Ph.D., Cornell, 1913; since 1920 was chief in research in the Illinois Agricultural Experimental Station, has done work for the Chicago Board of Health (R. 625-6); worked with Dr. Tracy at University of Illinois on study of paper containers (R. 627); author of many articles on milk products and milk control, of which two are in the record as plaintiff's exhibits 62 and 63. Many tests made on various aspects of paper milk containers were described by Dr. Prucha and the results appear in charts in the record (plaintiff's exhibits 46 to 60, R. 1572-88; testimony, R. 632-70, 700-16, 755-70, 788-90, 795, 804-5, 823-36). In visiting the paper mill at which respondent's container is made (R. 628), Dr. Prucha found the paper "practically sterile" and the sanitary methods used satisfactory (R. 630-1). In his experience there was a tendency for glass bottle-filling equipment to have more bacterial contamination than the machine for filling Pure-Pak containers (R. 655). In his opinion the Pure-Pak machine protects the unfilled containers "exceptionally well" (R. 659), the bacterial counts obtained in his tests of Pure-Pak containers are "very low" (R. 660), and the containers are sanitary (R. 661). In his opinion the bacteria that he found in adhesive in the containers (five per container) did not present a health problem (R. 710). In examining a Detroit paper mill, he found coli germs in the calender stacks, and after its treatment there the paper is not sterilized (R. 742-3). In his opinion the sanitary quality of that water was of sanitary significance (R. 743-4).

M. J. Woodman of Evanston, Illinois (testimony, R. 672-688), respondent's witness, is in charge of food and milk supply in the health department of Evanston, Illinois. He described rinse tests made in Evanston on respondent's container (R. 673-4). The Evanston Board of Health does not conduct disintegration tests (R. 682-3). He did not con-

sider it necessary to examine paper mills or fabricating plants (R. 675), and had not been to converting plants (R. 681) and did not know the temperature of the paraffin bath at respondent's Chemung plant (R. 685).

Fred O. Tonney of Chicago (testimony, R. 898-938), respondent's witness, bacteriologist and physician, graduate of University of Chicago; was connected with Chicago Board of Health from 1909 to 1937, when he was "executive officer" (R. 899), an office that was abolished in 1937, and the witness thereafter filed suit against the Board of Health (R. 936); was present at hearings of this case to advise respondent's counsel (R. 1001). He described visits made by him the week before he testified and arranged by respondent's counsel) to respondent's plant, to another plant packaging milk in paper containers, and to another plant packaging milk in glass containers (R. 902-06). He had not ever visited a paper mill making paper for milk containers (R. 921) or a converting plant (R. 922). In his opinion the rinse test was equally applicable to glass and paper containers and inspection of paper mills was an "unnecessary refinement" (R. 913). In his opinion the Pure-Pak container represents a distinct advance in the sanitary sale of milk (R. 910-11).

Howard R. Peterson of Chicago (testimony, R. 942-959, 966-67), respondent's witness, engineer at Standard Oil Company, which makes paraffin wax, graduate of University of Nebraska; did post-graduate work in chemical engineering at University of Chicago (R. 942-3). He described the paraffin used in the Pure-Pak machine for coating paper milk containers (R. 944), and tests made by him on the machine in 1939 as to the paraffin used (R. 944-8). In his opinion paraffin does not oxidize in the operation of the Pure-Pak machine (R. 953).

Paul V. Keyser of New York City (testimony taken by deposition, R. 1334-53), respondent's witness, is chemical engineer at Socony Vacuum Oil Company, Inc., graduate of Massachusetts Institute of Technology. He described the process of manufacturing paraffin, its chemistry, its qualities, its uses in coating paper containers, etc. (R. 1336-45). In his opinion a properly paraffin paper container would be satisfactory from the standpoint of absorption for a period of from one to two weeks (R. 1350-52).

Herbert M. Packer of Philadelphia (testimony taken by deposition R. 1355-76) respondent's witness, is a civil engineer, graduate of University of Pennsylvania, chief of housing and sanitation division of Philadelphia Department of Public Health since 1925 (R. 1355-6). He testified about the use of paper milk containers in Philadelphia (R. 1359-61, 1371-74). From a public health standpoint he preferred paper to glass containers (R. 1361-63). There were no regulations in Philadelphia about paper containers but there were about glass containers and he thought there should be regulations about paper containers (R. 1368-69).

A. E. Carpenter of Philadelphia (testimony taken by deposition, R. 1385-96), respondent's witness, is an employee of Sylvan Seal Milk, Inc., with milk plants in Philadelphia and Baltimore distributing milk in Pure-Pak containers (R. 1386-7). He described the extent of the sales made by his company and identified letters received by the company from public health officers of various cities commending the use of the containers (letters, plaintiff's exhibits 5-11, R. 1471-74). The petitioners objected to the admission of the letters on the ground that they were hearsay (R. 1709).

R. T. Vaughn of Chicago (testimony, R. 1302-06), respondent's witness, attending surgeon at Cook County Hospital, testified that mineral oil and paraffin are derived

from the same source (R. 1302) and that paraffin is used in surgery to fill bone cavities and as dressings for wounds (R. 1303-05).

William D. McNally of Chicago (testimony, R. 1251-1301), respondent's witness, physician and toxicologist, graduate of University of Michigan (A.B.) and University of Chicago (M.D.), toxicologist to coroner of Cook County for seventeen years, author of books and many articles (R. 1251-2). In his opinion there was no public health hazard presented by the lead in the ink "offset" on the inside of a paper milk container (R. 1253-62, 1277-89) or by the paraffin that gets in the milk from the container (R. 1262-66). In his opinion the paraffin on paper milk containers prevents bacteria in the container from getting into the milk, unless there was a break in the paraffin (R. 1267).

Lloyd Arnold of Chicago (testimony when called by respondent, R. 610-12; when called by petitioners, R. 1061-1204), since 1927 professor in charge of department of bacteriology and public health at University of Illinois College of Medicine, graduate of Vanderbilt University (M.D.), attended Universities of London, Oxford, Goettingen, Munich; member of Chicago Board of Health (one of defendants) since December, 1938, and since then has done administrative and consulting work for the Board, for which he receives compensation (R. 1064-5); attended all hearings in this case, including taking of deposition (R. 1106), and consulted with petitioners' counsel (R. 1109); has done research and consulting work on soap for Proctor & Gamble Company (R. 1107), on paper for Kimberly-Clark Corporation since 1928 (R. 1101), on paper containers for Ex-Cell-O Corporation during October to December, 1937 (R. 1096-1101) and for Sealrite Company during June to December, 1938 (R. 1102-03).

In his direct examination (R. 1061-1104) Dr. Arnold set forth what he considered the public health problems in

paper mills (R. 1067-75), in converting plants (R. 1075-80), and in paraffining plants (R. 1080-82); he described tests made by him on the absorption of paper containers (R. 1083-85); he stated his opinion of the accuracy of rinse and disintegration tests of paper milk containers (R. 1087-89), of the public health hazards of paraffin in the milk in paper containers (R. 1090-91), of the relative health problems in the use of paper milk containers and paper caps on glass containers (R. 1092-93), of the relative hazards in the use of paper containers for milk and for ice cream, coffee, butter, etc. (R. 1093-95). He described what caused him to change his opinion of paper milk containers as set forth in his report (plaintiff's exhibit 4) made to Dr. Bundesen of the Chicago Board of Health on December 4, 1937 (R. 1102-04). Throughout his testimony he stated his opinion to be that there were public health hazards in the various materials used in paper containers and in the various processes in the making of the containers.

The lengthy cross-examination of Dr. Arnold covers almost a hundred pages in the record (R. 1106-1201), and he was called as a witness by respondents to identify his report of December 4, 1937 (plaintiff's exhibit 4, R. 610-12). Much of his cross-examination was devoted to this report (R. 1121-22 1128-29, 1137, 1145-64, 1193-96). He testified that he did not know of any disease suspected to be caused by single-service containers (R. 1114), and that an advantage of the single-service container over the glass container was that the former aided the prevention of the spread of communicable diseases since the used container was not handled by milk handlers (R. 1115-6). He considered other witnesses, Drs. Sanborn, Prucha, Tracy, and Vaughn, to be competent in their fields and honest in their research work, but he disagreed with some of Dr. Prucha's interpretations of his experiments (R. 1129-34). He had never visited the Cherry River paper mill or the Gardner-Richardson Company (R. 1144).

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

REPLY BRIEF OF PETITIONERS.

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CHAMPLIN-SHEALY COMPANY, CHICAGO 365

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Respondent.

REPLY BRIEF OF PETITIONERS.

INTRODUCTORY COMMENTS.

Before discussing the separate points made in the respondent's brief, we make the following preliminary comments on a number of matters affecting the entire case.

(*a*) *The State of Illinois has not manifested a public policy in favor of paper milk containers.*

Throughout its brief respondent speaks of the use of paper milk containers as having been "approved" or "expressly sanctioned" by the Illinois legislature (brief, pp. 15,

31, 35, 47, 56, 77, 104, 114) and of the Illinois legislature as having found paper milk containers to be "wholesome" and "safe and sanitary," (brief, pp. 56, 58, 104). The respondent exaggerates the effect of the action of the legislature in passing the Milk Pasteurization Plant Act of 1939.

Before 1939 there was nothing in the Illinois statutes about paper milk containers. They were not forbidden; they were not permitted by express language; they were not regulated. So far as the State of Illinois was concerned, paper milk containers could thus be used without hindrance. In the 1939 statute all that the legislature did as to paper milk containers was to provide in item 10 of section 15 that "single-service containers . . . shall be manufactured and transported in a sanitary manner" (ch. 56½, sec. 129, Ill. Rev. Stat. 1941). While before the statute there was no restriction, the statute imposed a restriction by requiring that, if single-service containers are used, they shall be manufactured and transported in a sanitary manner. Certainly when a state requires for the first time that shoddy used in making blankets must be subjected to bactericidal treatment, when there has been no prior regulation, it does not, by imposing the restriction, manifest a public policy in favor of shoddy blankets. Similarly when a state for the first time regulates the use of intoxicating liquor theretofore unrestricted it does not thereby manifest a public policy in favor of it. The public policy of the 1939 Act which is pertinent here is that which expresses the legislature's determination of the appropriate distribution of governmental power between state and municipality. That policy clearly views regulation by the state, not as an ultimate exercise of the full scope of the police power, but as the fixing of *minimum* requirements beyond which municipal regulation is authorized and contemplated.

(b) There is no controversy in this case between the State of Illinois and the City of Chicago.

Much of the discussion in the respondent's brief (see particularly pp. 7-9) is intended to create the impression that there is a controversy here between the "sovereign" state of Illinois and "its instrumentality," the city of Chicago. The brief even speaks of the City of Chicago as "defeating the objectives" of the State of Illinois in passing the Milk Pasteurization Act of 1939. (Of course the provision in that statute that single service containers shall be sanitary does not mean that one of the objectives of the act was to permit the use of single service containers.) The policy of the State of Illinois is indicated by the statute. In the statute the voice of the sovereign state said that the powers of municipalities were not impaired or abridged. The power of the city to prohibit paper containers is thus in accord with the expressed wish of the state. In saying "less harm can result from a decision in favor of the sovereign than one in favor of its instrumentality," the respondent's brief overlooks the fact that the decision of the Circuit Court of Appeals that the city had no power is contrary to the expressed wish of the sovereign stated in the saving clause in the statute.

Respondent's brief says (p. 9) of the decision by the Circuit Court of Appeals:

> "It actually reenforces and protects the power of the state from impairment by judicial implication from doubtful language contained in an ambiguous statute."

There is no question here of protecting "the power of the state." The city is an arm of the state government. The state itself in clear language has delegated the power to the

city. In fact the Circuit Court of Appeals, in disregarding the language of the saving clause, has impaired the power of the state to distribute powers among subordinate bodies. While terming the saving clause "doubtful" and "ambiguous," the respondent's brief does not attempt to answer the analysis of its clear language in the petitioners' brief (pp. 19-21).

The respondent argues (p. 44) that "'chaos" in regulation will result unless it is held "that the city's power is withdrawn by implication in the field actually occupied by the State of Illinois." And it is said that this would lead to "an unseemly conflict of jurisdiction between the state and the city." The legislature may withdraw the city's power at any time it sees fit. There is no conflict of jurisdiction where the state has expressly conferred the power on the city. And chaos will not result. In the case of paper milk containers, there is nothing chaotic about a city forbidding a commodity to be sold in a container which is not forbidden in other parts of the state.

(c) *Further explanation of the application of Railroad Commission of Texas* v. *Pullman Co.*, 312 U. S. 496 (1941).

The respondent says (p. 4) that the petitioners' brief (pp. 31-34) shows that there is nothing in the *Pullman Company* case "which should preclude a decision of the question of local law by a federal court." That is not the position of petitioners. As a local governmental body the City of Chicago is of course interested in the doctrine stated in that case by Mr. Justice Frankfurter (p. 501): "a doctrine of abstention appropriate to our federal system whereby the federal courts, 'exercising a wise discretion,' restrain their authority because of 'scrupulous regard for the rightful independence of the state govern-

ments' and for the smooth working of the federal judiciary."

But, as noted in the petitioners' brief (pp. 32-33), it would be a misfortune from the city's standpoint if the present litigation were not terminated by the decision of this court. The holding of the Circuit Court of Appeals on the construction of the 1939 statute has clouded the powers of Illinois municipalities to such an extent that it would be an injustice to the city if the holding remained operative during the long delay that would ensue from the remandment of the case to the trial court to await a determination of the question in the state courts. Moreover, as pointed out in the petitioners' brief, the case was not instituted in the federal court for the purpose of having the local question determined; and it is not difficult to forecast the Illinois law on the question of the city's power under the clear language of the 1939 statute, particularly in view of the recent decision of the Illinois Supreme Court in *City of Geneseo* v. *Illinois Northern Utilities Co.*, 378 Ill. 506, 39 N. E. 2d 26 (1941), [the decision became final on January 15, 1942, after the filing of the petitioners' brief in this case]. Furthermore, the opinion of the Circuit Court of Appeals (R. 1794) discussed the reasonableness of the ordinance in such a way as to indicate clearly that the ordinance was unconstitutional. The importance of the constitutional validity of public health regulations seems clearly to call for a review by this court of the dictum of the Circuit Court of Appeals on the constitutional question.

Strangely enough, the respondent in its brief takes a position that seems to call for the application of the *Pullman Company* case here. If the spurious controversy between the State of Illinois and the City of Chicago fabri-

cated by the respondent had any basis in fact, this case would certainly be one that should be determined in the state courts.

Nevertheless, for the reasons noted in the petitioners' original brief, we continue to urge this court to make a final disposition of the questions presented.

The respondent argues (pp. 5-6) that the issues presented should be summarily determined by a *per curiam* opinion to the effect that the decision of the Circuit Court of Appeals should be affirmed because a question of local law has been passed upon by federal judges on the spot. This argument is based on the recent decision by this court in *MacGregor* v. *State Mutual Life Insurance Co.*, decided February 16, 1942, No. 179, October Term, 1941. That case is entirely different from the case at bar. It did not present a question of public law. There federal jurisdiction was based solely on diversity of citizenship. Here federal jurisdiction is based upon the existence of a federal constitutional question as well as on diversity of citizenship. And there a constitutional question was not discussed by the Circuit Court of Appeals, as it was by the Circuit of Appeals in the case at bar (R. 1794).

(d) Respondent's use of the term "paper milk bottles" and other assumptions in the respondent's brief.

Throughout the respondent's brief there is a studied use of the term "paper milk bottles." One of the issues in this case is whether or not a paper container *is* a "milk bottle." The Circuit Court of Appeals held that it is not. The repetition of "paper milk bottles" seems to be employed by the respondent on the theory that, by saying it often enough, it could induce a belief that its paper containers are "milk bottles." Similar devices of the propa-

gandist, "puffing" paper milk containers in the manner of an advertiser, are used throughout the respondent's brief.

For example, the respondent says (p. 64) that the trial court's holding that paper containers should be permitted was a holding that the law "should adopt the best scientific thought of the age," as if in some way the city's prohibition of paper containers to safeguard the city's milk supply was in conflict with modern sanitary standards. The record does not show this, for as the master found (R. 1734) the testimony of the *respondent's own witnesses* indicated that "the City Council could reasonably have concluded that prohibition of paper containers was necessary and appropriate to protect the purity and wholesomeness of milk." Similar assumptions in the respondent's brief are that the use of paper milk containers "promotes public health and proper sanitation" (brief, pp. 63-64); and that the requirement of the Illinois legislature that paper containers be manufactured and transported in a sanitary manner means that the City of Chicago, in forbidding their use, defeats "the liberal and progressive attitude of the state" (brief, p. 9). Throughout the respondent's brief are many statements on which there is no evidence whatever, some dealing with events that have obviously occurred since the trial. The respondent even goes to the extent of arguing that "considerations of present national policy in conserving automobile tires and man power are promoted by paper milk bottles" (brief, pp. 119-120). Milk is said to be sold in paper containers to army camps throughout the country "without a suggestion of ill effect" (brief, p. 105). It is said there has been no harm from the use of paper containers in Chicago sold under the protection of the injunction issued by the trial court in the case at bar (brief, p. 67).

These and similar statements in the respondent's brief deal with matters for the sole determination of the legislative body. Since they are outside of the record, they are not answered further in this reply brief, however weighty the countervailing considerations may be.

I.

The Illinois Milk Pasteurization Plant Act of 1939 did not deprive the city of power to pass the ordinance.

(Reply to respondent's Point I, brief, pp. 4-51).

The respondent's brief seems to lose sight of the fact that the question presented is one of statutory construction: did the Illinois legislature, in providing that when paper milk containers are used they must be manufactured and transported in a sanitary manner, thereby impliedly repeal the provision in the 1872 Cities and Villages Act giving the city the power to regulate the sale of milk? Repeals by implication are not favored.

Outstanding is the failure of the respondent to deny that the holding of the lower court means that the city's power under the 1939 statute is less than it was before. The holding means that the city's power *was* impaired by the statute, although the saving clause in section 19 of the statute says expressly, "*Nothing in this act shall impair or abridge the power of any city . . . to regulate . . . the . . . distribution of . . . milk . . .*". Moreover:

(a) The respondent does not discuss the meaning of the particular words in the saving clause. These words state emphatically and unmistakably that the power of the city under the 1939 statute is the same as it was under the 1872 statute (except for the inapplicable proviso). See petitioners' brief, pp. 19-21.

(b) The respondent does not answer the petitioners' contention (pp. 18-19) that, since the saving clause and

the title of the statute are in identical terms, the saving clause is as broad as language could make it and, whatever aspect of the milk industry is regulated by the statute, the legislature has said expressly that the city retains its power to regulate.

(c) The respondent does not answer the petitioners' contention (brief, p. 19) that the proviso in the saving clause evidences a legislative intention that only matters within the proviso are excepted from the broad operation of the saving clause under the rule, *expressio unius est exclusio alterius*, and consequently the power to forbid the use of paper milk containers is retained.

(d) The respondent does not answer the petitioners' contention (brief, pp. 24-25) that the Circuit Court of Appeals found that the ordinance conflicts, not with the entire statute, but with a part of it; and that the court's reasoning was basically fallacious in considering the effect of a part of the statute on the city's power *before* it considered the meaning of the clause that preserves the city's power. In fact the respondent commits the same error: *before* considering the meaning of the saving clause (respondent's brief, p. 34 *et seq.*), the respondent (brief, pp. 10-33) argues and concludes that the ordinance conflicts with the statute. There is no conflict between the ordinance and the statute when the statute is considered as a whole.

Inconsistencies in Respondent's Argument.

In arguing that the saving clause is not effective here, it was obviously necessary for the respondent and the Circuit Court of Appeals to attempt to show what the saving clause does mean. This attempt has involved both the lower court and the respondent in a maze of inconsistencies. The respondent argues first (brief, p. 26) that in the 1939 statute

> "the utmost care is taken to include *all important details* with reference to the sale and distribution, as well as the pasteurization, of milk, and to give the State Director of Health power to supplement the requirements."

And again the 1939 act is said to regulate "in detail *the entire field of milk distribution*" (brief, p. 34). Then, when the respondent comes to discussing the saving clause, the brief says (p. 36) that the saving clause leaves the city's power unimpaired "as to all those numerous matters not governed by the statute" and that the city's power is preserved "on those subjects not occupied by the state system of supervision" (p. 48).

Thus, while the statute is said to occupy the entire field, the saving clause is said to preserve some of the city's power. Yet the brief also says (p. 44) that the statute withdraws the city's power "in the field actually occupied by the state." And the statute is said to show no intention to permit cities "to occupy the same field of regulation as the state" (p. 33). Clearly there is nothing left for the city to regulate if the 1939 statute covers "all important details with reference to the sale and distribution, as well as the pasteurization, of milk." Moreover, the respondent's interpretation of the saving clause conflicts with that of the majority opinion of the Circuit Court of Appeals, which said:

> "The purpose of the saving clause, in our judgment, was to preserve in the city the unquestioned right to continue *in a field which had been entered by the state, and in which, thereafter, each should have co-extensive power and authority.*" (R. 1793; italics added.)

And this statement in the opinion is inconsistent with the court's holding that the 1939 statute has deprived the city of power to forbid the use of paper containers, (see petitioners' brief, p. 29).

Similarly, the respondent is inconsistent in arguing (pp. 50-51) that under the 1939 statute the city may *regulate* paper containers although it may not *prohibit* their use.

This also was said in the majority opinion of the Circuit Court of Appeals. The basis of the contention that the city may not prohibit their use is that the state has entered the field by providing that paper containers must be manufactured and transported in a sanitary manner. The same argument strikes down the power of the city to regulate. For example, if the city should require that the paraffin bath in which the container is dipped must have a certain temperature which happened to be higher than that required by the state, the city's regulation would be in the field occupied by the state. And the argument of state approval would also apply, since the container would meet the state requirements as to the temperature of the paraffin bath and the city would be prohibiting what the state permitted.

Similarity of Saving Clause in 1941 Grade A Milk Law.

Respondent concedes (brief, p. 32) that the language of the saving clause contained in the 1941 Grade A Milk Law is effective to express the legislative intention that municipalities retain the power to enforce more rigid sanitary requirements than are provided by statute. This concession makes it appropriate to point out the origin of the difference in language between the saving clauses in the two statutes. The saving clauses in the two statutes, although phrased in different words, express an identical legislative purpose.

The Grade A Milk Law and the Milk Pasteurization Law were companion pieces of legislation introduced in the 1939 session of the Illinois General Assembly as Senate Bills 287 and 288, respectively. Both bills were passed by the General Assembly and approved by the governor but the saving clause which had been added to S. B. 287 (the Grade

A Milk Law) was omitted from the engrossed bill as signed by the governor. The omission was not immediately noted and the bill, without the saving clause, was printed in the 1939 Session Laws of Illinois (Laws of Ill. 1939, pp. 667-670). On January 26, 1940 the attorney general issued an opinion holding that the act as it appeared in the Session Laws of 1939 was void because of the omission of the saving clause.*

On August 4, 1939 (apparently before the omission of the saving clause had been called to his attention) the Director of the State Department of Public Health promulgated his "minimum requirements" under the Act and published the Act and the minimum requirements promulgated by the Department in pamphlet form. ("Grade A Milk Law and Minimum Requirements for Interpretation and Enforcement Published by Illinois Department of Public Health," printed by the authority of the State of Illinois, 1939). As published, the statute and the minimum requirements were preceded by an explanatory "introduction" which is so pertinent to the question of legislative construc-

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*The story appears in the opinion of the attorney general addressed to the director of the Department of Public Health, holding the 1939 Grade A Milk Law invalid because of the omission of the saving clause from the bill as signed by the governor (Illinois Attorney General's Report and Opinions, 1940, pp. 69-71). The legislative history of the 1939 legislation appears in Senate Journal Illinois 1939, pp. 250, 357-8, 429, 439-40, 461, 690, 1421-2; House Journal Illinois 1939, pp. 934, 964, 1011, 1019, 1155, 1246, 1368, 1532, 1546, 1589, 1636, 1796-7, 1872, 1890.

tion involved in this case that its opening paragraphs are set forth in a footnote.*

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*"This 'Grade A Milk' Act does not make the grading or grade labeling of milk compulsory. The use of the grade A label is entirely voluntary with each dairyman or distributor. The Act does control the use of the Grade A label to the extent of setting up standards or minimum requirements for the production, handling, and processing of milk so labeled. It empowers the Director of the Department of Public Health to enforce such minimum requirements and it provides penalties for violations.

"The Act establishes State-wide standards or minimum requirements and definitions of "Grade A Milk" and "Grade A Milk Products." It prohibits the misuse of the Grade A label, and was enacted to protect the consumer of milk from the dairyman or distributor who would label his product as Grade A without regard for the sanitary conditions of its production, handling, processing and distribution.

"In order to protect the health of consumers, many municipalities in the State have adopted milk sanitation control ordinances recommended by the Department. These ordinances provide for the labeling of milk as "Grade A", when the provisions of the ordinances have been complied with as determined by local sanitarians. This Act goes further and makes it possible for a dairyman or distributor located where there is no local sanitary supervision of milk supplies, to produce and distribute milk as "Grade A Milk", when the provisions of the law have been complied with as may be determined by the Department of Public Health, after inspection of the premises and investigation of methods. Continued use of the label depends on continued operation of the dairy or milk plant in conformity with the law and requirements. * * * "Grade A Pasteurized Milk" means the same quality of milk as that identified with the Grade A raw label but which has the added protection of pasteurization. The fact that the Act legally recognizes raw milk does not relieve health authorities of the responsibility of advocating pasteurized milk as the only assuredly safe milk supply.

"In formulating the minimum requirements authorized in Section 16 of the Act, for the interpretation and enforcement of the Act, the form and contents have been patterned as near as practicable to the Grade A ordinances in force in municipalities of this State and throughout the United States. *This Act will in no way conflict with existing municipal grading ordinances. Municipalities are empowered to enact and enforce more rigid sanitary requirements than are provided in the Act.*"

The identical language appears in the introduction to the pamphlet publication of the 1941 Grade A Milk Law which was published after the reenactment of the statute in 1941. (Grade A Milk Law and Minimum Requirements for Interpretation and Enforcement. Educational Health Circular No. 135.) No introduction was published in connection with the pamphlet publication of the Milk Pasteurization Law.

Reference to the legislative history of the two statutes shows that the saving clauses originated by amendment in the house of representatives on successive days (S. B. 297, June 27, 1939, H. J. Ill. 1939, p. 1589; S. B. 288, June 26, 1939, H. J. Ill. 1939, p. 1532).

The 1941 Grade A Milk Law is a reenactment of the 1939 act. The language of the saving clause which respondent concedes to be effective to preserve municipal power originated in 1939, one day after the language of the saving clause involved in this case. Omitting the portions of the two saving clauses which repeat the language of the titles of the respective acts, they read as follows:

The Grade A Milk Law:

> "Nothing in this Act shall impair or abridge the power of any city, village or incorporated town to regulate * * * provided the minimum requirements under this Act are observed."

The Milk Plant Pasteurization Law:

> "Nothing in this Act shall impair or abridge the power of any city, village or incorporated town to regulate * * * provided that such regulation not permit any person to violate any of the provisions of this Act."

The language of the two saving clauses will not support a difference in interpretation. Any violation of the state law is a failure to observe the minimum requirements of the state law—and any failure to observe the minimum requirements of the state law is a violation of the state law. Of course meticulous perfection might require that if the intention is identical, identical language should be used. But the goal of pedantic perfection vanishes in the reality of the legislative atmosphere. To say that a precise sense of orderliness would indicate identity of language is

not at all to say that different words may not be used to express a single thought.

To say that these two saving clauses originating on successive days express entirely different notions about a matter so fundamental as the distribution of important public health powers between a state and its municipalities, more must be required than a mere difference in choice of words. The primary object of the Milk Pasteurization Law is to regulate conditions in the pasteurization plant. The primary purpose of the Grade A Milk Law is to regulate conditions upon the dairy farm. So far as the City of Chicago is concerned, the two acts cover the entire scope of municipal regulation pertaining to milk.*

If there can exist any reason why the state should be considered to have preempted the field of permissible regulation with respect to pasteurization plants, while municipal and state regulation are permitted to exist side by side in the field of regulation of the dairy farm, that reason does not occur to us and has not been suggested in this case. Certainly the use of the words "provided that such regulation not permit any person to violate any of the provisions of this Act" contrasted with the words "provided the minimum requirements under this Act are observed" does not accomplish this result.

Importance of Recent Case of City of Geneseo v. *Illinois Northern Utilities Co.*

The respondent cites two of the many cases involving the question of whether or not the Illinois Public Utilities Act had repealed by implication powers theretofore granted to Illinois municipalities. *Village of Atwood* v.

*This is true because under the Chicago Milk Ordinance only grade A milk is permitted to be sold (R. 45).

Cincinnati, etc. R. Co., 316 Ill. 425 (1925), and *Northern Trust Co.* v. *Chicago Railways Co.*, 318 Ill. 402 (1925). The language of the opinions in these two cases has been somewhat restricted by a case just decided by the Illinois Supreme Court.

This latest case is *City of Geneseo* v. *Illinois Northern Utilities Co.*, 378 Ill. 506, 39 N. E. 2d 26 (1941) [the decision did not become final until the denial of a motion to reconsider on January 15, 1942, which was after the petitioners filed their brief in the case at bar.] In that case article 5 of the 1872 Cities and Villages Act granted cities the power to regulate the use of streets. These provisions had been held by Illinois courts to authorize cities and villages "to regulate and control the use of their streets and this included the right to grant to or to withhold that use from utilities." The Illinois Public Utilities Act of 1921 (sec. 1 *et seq.*, ch 111-2/3, Ill. Rev. Stat. 1941) granted to the Illinois Commerce Commission complete control over public utilities. Section 49a of the act, added in 1935, provided that a public utility should not abandon or discontinue its service without having secured the approval of the commission. Other sections of the statute, as originally enacted and as added by amendment, gave the Commerce Commission extremely broad powers over all aspects of public utilities.

In that case an electric utility had been granted a franchise by a city to place its poles and other equipment upon and under the streets. When the franchise expired, the utility company refused to remove its equipment. An ordinance was passed directing removal. The city then also filed a suit for a mandatory injunction to compel the removal of the equipment. This suit finally reached the

Illinois Supreme Court, which held squarely in 1936 that the Public Utilities Act had withdrawn from the city the power to determine whether or not the utility company should continue or cease its business in the city [*City of Geneseo v. Illinois Northern Utilities Co.*, 363 Ill. 89 (1936)]. The Supreme Court in its opinion used language similar to that used by the respondent in the case at bar:

> "It is obvious that by this enactment [the Public Utilities Act] it was the legislative intent to withdraw from local municipalities supervision of public utilities and to vest the same in the Commission with the exclusive power of regulation and control of all means and instrumentalities used by the utility in the conduct of its business" (363 Ill. 95).
>
> "To permit the city to exercise control over the instrumentalities of a public utility occupying the city streets would be to give to the city in that respect concurrent jurisdiction with the Commission of a public utility, a result not contemplated by the statute and one which cannot be drawn therefrom by a legitimate interpretation thereof" (363 Ill. 97-98).

After this adverse decision, the city filed a complaint with the Commerce Commission praying that the utility be ordered to remove its equipment from the streets. The commission denied the prayer of the complaint on the ground that public convenience and necessity did not require the termination of the service of the utility. This proceeding also eventually reached the Illinois Supreme Court and in this recent decision *it completely reversed its former holding.*

Obviously the regulation of public utilities by the Commerce Commission and the regulation of the sale of milk involve different problems; and the Illinois Public Utilities Act is of an entirely differently character from that of the Milk Pasteurization Act of 1939. Nevertheless the decision

in the *Geneseo* case is extremely important here because it represents the present attitude of the Illinois courts toward legislative grants of municipal power. As we have said repeatedly, the case at bar presents a simple problem because it is only necessary to look to the clear and unambiguous language of the saving clause in the 1939 statute. But the opinion in the *Geneseo* case answers a number of the arguments presented by the respondent. We note a number of matters discussed in the opinion.

1. After stating the proposition that a grant of a specific power will impliedly repeal a like power previously granted to a municipality, the opinion continued (378 Ill. 514):

> "*This is not necessarily true where there is merely such a conflict between the granted powers of the respective governing bodies that part may remain in effect and part remain unaffected.*" (Italics ours.)

In the case at bar the prohibition of the use of paper milk containers by the City of Chicago may remain in effect even though the 1939 statute provides that paper milk containers "shall be manufactured and transported in a sanitary manner."

2. In an earlier case [*Chicago Motor Coach Co.* v. *City of Chicago*, 337 Ill. 200, 169 N. E. 22 (1929)] the Illinois Supreme Court had held that the city had no power to prohibit the operation of motor busses in the city streets when the motor busses had a certificate of convenience from the Commerce Commission. The ground of the decision was that the earlier power of the city to regulate the use of the streets had been repealed by implication by the Public Utilities Act. In the *Geneseo* case the *Chicago Motor Coach Company* case was discussed at length. The following comment on the *Chicago Motor Coach Company* case completely an-

swers the distinction attempted to be drawn by the respondent in the case at bar between "regulation" and "prohibition." The court said (378 Ill. 518):

> "As the basis of its decision the court held that the city never had any right under any of the powers granted to it by the legislature to *prohibit* the operation of automotive vehicles on the city streets, and while it had power under paragraph 65.8, to *regulate* the use of the streets by such vehicles, regulation was inconsistent with prohition or exclusion." (Italics added.)

And the court later said that this language in the earlier case "is not adhered to" (378 Ill. 530).

3. The opinion of the Illinois Supreme Court shows that the problem is one of statutory construction—that is, whether or not the later exercise of power by the state repeals the earlier grant of power to the municipality. Of repeals by implication in this type of legislation the court said (378 Ill. 529):

> "Repeals by implication are not favored. It is only when there is a clear repugnancy and both acts cannot be carried into effect that the former is repealed. *People* v. *Burke*, 313 Ill. 576, 145 N. E. 164; *People* v. *Czarnecki*, 256 Ill. 320, 100 N. E. 283. Statutes which are seemingly repugnant should, if possible, be so construed that the subsequent act may not operate to repeal by implication the earlier act. *People* v. *Board of Education*, 349 Ill. 390, 182 N. E. 455; *People* v. *Shader*, 326 Ill. 145, 157 N. E. 225. Where a special act is repugnant to or inconsistent with a prior general statute a partial repeal of the latter will be implied or exception grafted upon the general statute. *People* v. *Missouri Pacific Railroad Co.*, 342 Ill. 226, 173 N. E. 816. In determining whether one statute is repugnant to another the court should consider its several parts in connection with correlated sections in pari materia. *People* v. *Board of Education, supra.* The repeal by implication of one act by a later act is not effected by

mere conflicts or inconsistencies between them, but only where the carrying out of the later act prevents the enforcement of any part of the former. To the extent they are in conflict the first act is repealed, but the parts of the first act not affected remain in full force and effect."

4. Of the attitude of the court in construing legislation of this type the opinion also said (378 Ill. 533):

> "It is not for us to judge the propriety of legislation, but to construe the laws when enacted. The legislature has not seen fit to say, in express language, or by the enactment of directly conflicting provisions, that the control of the occupancy of the streets of a city has been transferred to the Illinois Commerce Commission, and, as we construe the law, they never did intend so to do."

In the case at bar the majority opinion of the Circuit Court of Appeals, in saying that the power of the city to forbid the use of paper containers would result in "chaos" and would make the state "subservient" to the city, was not "construing" the saving clause but judging "the propriety of legislation."

5. The Public Utilities Act involved in the *Geneseo* case contained a saving clause (sec. 81; ch. 111⅔, sec. 85, Ill. Rev. Stat. 1941) reading as follows:

> "Nothing in this Act shall be construed to limit or restrict the powers now or hereafter granted to cities to pass ordinances for the protection of the public health, safety, comfort and the general welfare, or governing the regulation, control or occupation of streets, highways and public property within the city."

The language of this clause is obviously of limited effect in comparison with the wide scope of the Public Utilities Act and is much less comprehensive than the saving clause in the Milk Pasteurization Plant Act of 1939, which, being

in the same language as the title of the act, necessarily covers everything within its scope. Neverthless, in the *Geneseo* case the Illinois Supreme Court gave a *broader* interpretation to the saving clause than had been given in earlier decisions. In *Village of Atwood* v. *C. I. & W. R. R. Co.*, 316 Ill. 425 (1925), the court had said (p. 429) that section 81 concerned only local utilities in cities which had adopted article VI of the act. In *Chicago Motor Coach Co.* v. *City of Chicago*, 337 Ill. 200 (1929), and in the first *Geneseo* case, 363 Ill. 89, 96 (1936), the court had held that the saving clause related only "to the original installation or construction of the utilities upon the streets and not to the supervision, regulation and control of the operation of such facilities after installation." Both of these earlier constructions of the saving clause were rejected in the opinion in the second *Geneseo* case (378 Ill. 523-524, 530.

6. In the *Geneseo* case the Illinois Supreme Court emphasized the importance of the maintenance of municipal authority. Counsel for the utility company had pointed out the financial effect of the decision upon utility companies. In commenting on this factor in this case, the court said (378 Ill. 533):

> "Giving full weight to appellee's claim of the extent the construction herein will affect public utilities, it is equally true *the opposite construction will have as great, if not greater, effect upon the administration of corporate powers by cities and other municipalities.*" (Italics added.)

The Illinois Supreme Court's concern for the powers of Illinois municipalities is in great contrast to that shown by the Circuit Court of Appeals in the case at bar.

* * * * * *

The respondent does not mention the fact (noted in petitioners' brief, p. 14) that the 1872 statute has been supplanted since 1939 by the 1941 Revised Cities and Villages Act, which, in a provision more specific than the earlier provision in the 1872 act, provides expressly that the city has the power to regulate "the manner in which any beverage or food for human consumption is sold" (see petitioners' brief, p. 14). Even if the 1939 statute repealed impliedly the former grant of power in the 1872 act (which of course we deny), this new provision has not only re-conferred the power on the city but has expanded the city's power. Section 50 of the 1872 act gave the city power "to regulate the sale of . . . provisions and to provide for the place and manner of selling the same." The new statute uses the word "beverage" which was not in the former statute. While the older statute gave the city power "to provide for" the manner of selling, the new statute says the city may "regulate the manner in which" the beverage is sold.

The respondent's discussion (pp. 37-39) of an earlier case does not detract from the pertinence here of *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939). It is of vital importance here as indicating the attitude of Illinois courts in construing legislative grants of municipal power. There, as here, the city had a power to regulate under the 1872 Cities and Villages Act. There, as here, the state began to regulate. There, as here, the statute contained a saving clause. And there, as should have been held here, the Illinois Supreme Court held that the pre-existing power of the city was retained by the saving clause, although the same claims of conflict between city and state regulation could be made as are made here.

The respondent reiterates the idea that the city regulations may not prohibit what the state permits (brief, pp.

66, 63) and this is said to be a condition of a valid ordinance. There is no rule of law to this effect. The state may authorize the city to forbid what the state permits. If this were not true, it would be impossible for city regulations to go further than state regulations. The respondent attempts to extract a purported rule to the contrary from the opinion of the Illinois Supreme Court in *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311-315, (1911). There, in holding an ordinance valid, the court noted in passing that the ordinance "does not prohibit what the statute permits." There was no holding that any ordinance is invalid which prohibits what the statute permits, as argued by the respondent.

The respondent (pp. 23, 57) seems to deny that even before the 1939 statute the city had power to forbid the use of paper milk containers. There is no argument in support of this contention. As shown by the lengthy discussion in the petitioners' brief (pp. 13-17), the 1872 Cities and Villages Act contained numerous provisions that gave the city, as held in *Koy* v. *City of Chicago*, 263 Ill. 122, 131 (1914), the power to require that "the receptacle in which milk is contained . . . be of prescribed character." The opinion of the Circuit Court of Appeals so interpreted the *Koy* case when it referred to "the broad field of regulation which it (the city) had theretofore had as recognized in *Koy* v. *City of Chicago*, 263 Ill. 122."

The respondent's brief (pp. 12-19) cites a number of Illinois decisions. The question presented in all of the cases was one of the intention of the legislature: did the statute involved indicate an intention to withdraw the power of the municipality? In some of the cases there had been an early statute granting the power, an exercise of the power by the municipality, and then a later statute by which the

state did what the municipality had been authorized to do; and the later act was held to repeal the earlier by implication. The respondent's brief does not state clearly that the question presented here is one of statutory construction: did the 1939 statute repeal by implication the broad grant of power to the city in the 1872 Cities and Villages Act? The great extent of the power is shown by *Koy* v. *City of Chicago*, 263 Ill. 122 (1914). The saving clause in the 1939 statute, in saying that the power of cities is not impaired or abridged, states expressly that there is no repeal whatever of the power of a city or village, so that the statute may not be said to have impliedly repealed anything. In none of the cases cited in the respondent's brief (pp. 12-19) was there an operative saving clause as in the case at bar.

City of Rockford v. *Hey*, 366 Ill. 526 (1937), discussed at length by the respondent (brief, pp. 19-21, 50) was neither relied on nor cited by the Circuit Court of Appeals. It has no bearing here. That case held invalid an ordinance that required ice cream manufacturers to pay a license fee to the City of Rockford for inspection of their factories *in other cities*. The question there, as noted in the opinion (p. 530), was whether or not the City had authority to empower "inspectors of its health department to go beyond the corporate limits to inspect ice cream factories." No such question is raised here by the provision in the ordinance that "milk sold in quantities of less than one gallon shall be delivered in standard milk bottles." Here the ordinance operates only within the City of Chicago. The respondent was not refused a permit to sell milk in Chicago because its plant outside of Chicago does not comply with Chicago regulations but because the respondent seeks to sell milk in Chicago in a manner forbidden by the ordinance. The Chicago ordinance applies to milk sold

in Chicago whether placed in the container within or without the corporate limits. The vice in the Rockford ordinance, as noted in the opinion (p. 534), was that the legislature had not given municipalities power "to pass a regulatory and license ordinance which assumes to regulate ice cream factories outside their corporate limits." The prohibition of the use of paper milk containers in Chicago does not assume to regulate the respondent's plant at Chemung, Illinois.

The respondent discusses the statute at length in an attempt to establish a conflict between the ordinance and the 1939 statute. The sections of the statute and the regulations of the Department of Health merely contain some provisions *about* paper milk containers. They do not say that paper milk containers must be permitted, but merely recognize and regulate their use. The respondent's statement (pp. 50-51) that the State of Illinois "makes it illegal" for the plaintiff to sell milk in any way but in paper containers is clearly wrong. It may be that the plaintiff has no equipment to bottle milk and that the state regulations forbid the use of paper-container equipment for filling glass containers. But the state does not prevent the plaintiff from using other equipment to fill glass containers or from selling milk in glass containers.

In discussing the rule that the statute controls where there is a conflict between a statute and an ordinance, the respondent (p. 15) cites the quotation of the Circuit Court of Appeals (R. 1791) from 2 McQuillin on Municipal Corporations (2d Ed. 1928) 572. The court did not quote the entire sentence. The word "established" at the end of the quotation is not followed by a period but by a comma and, after saying that an ordinance may not be contrary to a

public policy expressed in legislation, the text continues with the following words:

> "unless there is a specific, positive, lawful grant of power by the state to the municipality to ordain otherwise, in which event the specific, positive, lawful grant is from the same source of authority that made and has been expressed through legislation the policy of the state."

This important clause not only shows that the problem is one of statutory construction, but applies expressly to the "specific, positive, lawful grant" of power to the city in the saving clause.

The respondent also quotes (p. 15) from 43 Corpus Juris 215-17, section 219, which states the general rule about conflicting ordinances and statutes. A more specific discussion in section 220 (pp. 218-220) shows that there is no conflict in the present case.

> "The rule that a municipal ordinance in conflict with a state law is void does not apply unless the state law with which the particular ordinance conflicts is intended to apply, and is, in fact, applicable and imperative in the particular municipal corporation in which such ordinance has been enacted" (43 Corpus Juris 219).
>
> "The fact that an ordinance enlarges upon the provisions of a statute by requiring more than the statute requires creates no conflict therewith, unless the statute limits the requirement for all cases to its own prescriptions" (43 Corpus Juris 219-220).

The respondent (pp. 39-43) cites a Missouri and a Connecticut case on this point. In each case, the municipality forbade the sale of "raw" (i.e. unpasteurized) milk. In each case the state legislature had provided by statute for the sale of various types of milk, including raw milk. In one case, *Shelton* v. *City of Shelton*, 111 Conn. 433, 150 Atl.

811 (1930), the state statute permitting the sale of raw milk contained a saving clause to the effect that the statute should not affect the authority of a municipality to enact an ordinance "for the control, regulation, sale or distribution, within its limits, of milk which might be detrimental to the public health." It was held by a court divided three to two that this saving clause did not permit the municipality to forbid the sale of raw milk. The parties stipulated that raw milk was not "detrimental to the public health," so that the saving clause was clearly inoperative. In the other case, *State ex rel. Knise* v. *Kinsey*, 314 Mo. 80, 282 S. W. 437 (1925) it was held that an ordinance forbidding the sale of raw milk was invalid: There the state statute permitting the sale of raw milk *did not contain a saving clause* so that another statute giving the municipality power "to license and regulate milk dairies and the sale of milk" was repealed by implication. The factors noted clearly distinguish the case at bar from the Missouri and Connecticut cases. Moreover, on the peculiarly local problem presented here the decisions of non-Illinois courts are not important precedents. This is particularly true in view of the recent decision of the Illinois Supreme Court in the second *Geneseo* case discussed above.

II.

The fact that the State of Illinois regulates paper containers does not make unreasonable the ordinance prohibiting their use.

(Reply to respondent's Point II, pp. 52-60.)

There are two aspects to the respondent's contention on this point: (1) there is said to be a rule in Illinois that an ordinance must be reasonable aside from any question of constitutionality; (2) the unreasonableness of the ordi-

nance is said to be shown conclusively by the 1939 Milk Pasteurization Plant Act. The second point shall be considered first.

The respondent relies here upon the same factor relied upon in its Point I to show that the city lacked power to enact the ordinance—i.e., that the legislature has "approved" paper containers and found them to be "safe and sanitary" and "wholesome." The respondent speaks of "the approval of this type of container by the sovereign" and says that this is a type of container "which the supreme legislative authority of this state has permitted and approved and declared safe and sanitary" (brief p. 55). The approval relied on occurred in a statute that, through the saving clause in section 19, expressly preserved the city's power to forbid what the state approved. The approval operated only to the extent intended by the legislature and was granted subject to more stringent restrictions imposed by municipalities. This completely destroys the foundation of the respondent's argument. Its fallacy is further shown by its inevitable result. Once the state had regulated anything there could be no further regulation. The state could not give a city power to regulate further, for the city's more stringent restriction would be unreasonable as a matter of law. The respondent's argument, if adopted by the courts, would impose a serious limitation on the state's authority to make what it deemed a desirable distribution of internal governmental powers.

While the charge in the complaint (R. 14) was that the ordinance violates the due process clauses of the Illinois and federal constitutions, the respondent argues that there is some rule peculiar to Illinois that makes ordinances invalid if they do not meet the concept of "reasonableness," even apart from constitutional law.

This is said (respondent's brief, p. 54) to be an Illinois rule, "much more favorable to judicial review of municipal action than that of other jurisdictions." That this is an erroneous interpretation of the Illinois cases is shown by the fact that the case of *City of Lake View* v. *Tate*, 130 Ill. 247 (1889), the case cited by the respondent (p. 52) as establishing the rule and cited also in later Illinois cases, indicates the rule to be a general principle of the law operative everywhere. The *Tate* case quotes (p. 252) the classic work, Dillon on Municipal Corporations, as authority for the rule. The question of unreasonableness under this rule is determined by the same principles that operate in applying the due process clause. In the *Tate* case (p. 252) the court said that, in determining the question, "the court will have regard to all the circumstances of the city, the objects sought to be attained, and the necessity which exists for the ordinance." Also under this rule, the same presumption of validity exists as when the validity of an ordinance under the due process clause is raised. In *Chicago and Alton Railroad Co.* v. *City of Carlinville*, 200 Ill. 314 (1902), quoted from by the respondent (p. 52), the court said (p. 322):

> ". . . This ordinance, to be valid, must not, therefore, be unreasonable. The presumption, however, is in favor of its validity and that it is reasonable, and it is incumbent upon appellant to point out and show affirmatively wherein such unreasonableness consists. (*People* v. *Cregier*, 138 Ill. 401.) Ordinances of the character of the one under consideration are passed *under and by virtue of the police power*, which has been defined, in general terms, 'as comprehending the making and enforcement of all such laws, ordinances and regulations as pertain to the comfort, safety, health, convenience, good order and welfare of the public.' (*Culver* v. *City of Streator*, 130 Ill. 238.) The determination of the question whether or not the ordi-

nance in question was reasonably necessary for the protection of life and property within the city was committed, in the first instance, to the municipal authorities thereof by the legislature. *When they have acted and passed an ordinance it is presumptively valid; and before a court would be justified in holding their action invalid, the unreasonableness or want of necessity of such a measure for the public safety and for the protection of life and property should be clearly made to appear. . . .*" (Italics added.)

Thus whether the ordinance is challenged as unreasonable under the due process clause or under a principle of the law of municipal corporations, the question presented is the same. As stated in the *City of Carlinville* case quoted above, it is a question of the valid exercise of the police power and "the unreasonableness or want of necessity of such a measure for the public safety and for the protection of life and property should be clearly made to appear." The petitioners have shown in their original brief (pp. 40-78) that the evidence here does not prove that the ordinance is clearly unreasonable. This answers the attack on the ordinance, whether the attack is based on an alleged violation of a constitutional right or otherwise.

The respondent (p. 53) cites *City of Chicago* v. *Chicago & North Western Ry. Co.*, 275 Ill. 30 (1916), and notes that a provision of the Chicago milk ordinance was there held invalid. The regulation involved was held invalid because it was physically impossible to make the tests required (see opinion, pp. 36-37), and this was in effect conceded by counsel for the city in the Supreme Court. The case illustrates, however, how reluctant the Illinois courts are to overturn ordinances regulating the milk industry. Although evidence was taken in the trial court, the Supreme Court reversed the case for further proceedings in the belief that proof might be presented to show that the ordi-

nance could be complied with. And the court reaffirmed the broad powers of the city over the milk industry (p. 39):

> "We realize how important this question is to the health of the people of Chicago and the State at large, and we have no hesitation in re-affirming the rules laid down in *Koy* v. *City of Chicago, supra,* and *City of Chicago* v. *Bowman Dairy Co., supra,* with reference to the right of the authorities of the city of Chicago to make all proper and reasonable regulations with reference to the care, transportation, sale and delivery of milk in order to protect and promote the health of the people,—especially the children,—of that great city. . . . ."

In view of the respondent's claim that the Illinois courts interfere with municipal regulations more readily than the courts of other states, we quote from *Gundling* v. *City of Chicago,* 176 Ill. 340 (1898), where a city regulation of the sale of cigarettes was upheld, the opinion stating (p. 349):

> "When the city council considers some occupation or thing dangerous to the health of the community, and in the exercise of its discretion passes an ordinance to prevent such a danger, it is the policy of the law to favor such legislation as being humane and essential to the preservation and protection of the community. Municipalities are allowed a greater degree of liberty of legislation in this direction than any other. The necessity for action is often more urgent and the consequences of neglect are more detrimental to the public good in this than in any other form of local evil. . . . "

The respondent says (p. 57) that this suit was filed challenging the city's power to prohibit paper containers before the passage of the 1939 act and that "the city's assumption that it had such power prior to the passage of the statute is highly debatable and vigorously contested." The complaint (R. 14) seems clearly to indicate that the only ground of invalidity alleged was under the federal

and state constitutions. Moreover, while making the above statement, the respondent presents no argument to show that the city lacked the power before the 1939 statute. We submit that petitioners' brief (pp. 13-17) establishes the power of the city under the 1872 Cities & Villages Act as construed by the Illinois Supreme Court in a number of cases, particularly *Koy* v. *City of Chicago*, 263 Ill. 122 (1914).

III.

The ordinance is not invalid on constitutional grounds.

(Reply to respondent's Point III, pp. 61-105).

(a) Principles governing the validity of the ordinance under the federal and Illinois due process clauses.

The respondent complains (p. 61) that the petitioners cite "very few Illinois cases" on the question of the reasonableness of the ordinance. The respondent overlooks the Illinois cases cited on pages 38 and 39 of the petitioners' brief all dealing with the reasonableness of regulations passed to protect the public health. In *Koy* v. *City of Chicago*, 263 Ill. 122, 130 (1914), the Illinois Supreme Court said that the regulation of the sale of milk *"is an imperative duty which has been universally recognized," there being no article of food whose impurity may "more quickly, more widely and more seriously affect the health of those who use it."* This duty was said to include requirements that "the receptacles in which milk is contained . . . be of prescribed character." While the complaint (R. 14) alleges that the ordinance is invalid under the federal constitution, not one decision of a federal court is cited in support in the respondent's brief.

The latest decision of the Illinois Supreme Court cited in the briefs on the question of the reasonableness of health regulations shows that the Illinois courts apply the same principle in determining the "reasonableness" of a health ordinance under the Illinois constitution as is applied in federal courts. In *People* v. *Quality Provision Co.*, 367 Ill. 610, 614 (1938), a regulation forbidding the addition of sodium sulphite to sausage as a preservative was upheld on the ground that it was within the power of the legislature to "declare sulphurous acid and its derivatives adulterants and forbid their use in food products" (p. 615). Indicative of the application by the Illinois Supreme Court of the same principle applied in federal courts was a long quotation in the opinion from the opinion of this court in *Price* v. *Illinois*, 238 U. S. 446, 451, 452 (1915), where it was said that a health restriction was a matter for the legislative judgment unless the article prohibited

> ". . . indubitably must be classed as a wholesome article of commerce so innocuous in its designed use and so unrelated in any way to any possible danger to the public health that the enactment must be considered as a merely arbitrary interference with the property and liberty of the citizen."

The respondent has not presented the evidence required by this principle. The master, who heard the numerous expert witnesses testify, found that there was evidence in the record *from the respondent's own witnesses*

> ". . . from which the City Council could reasonably have concluded that prohibition of paper containers was necessary and appropriate to protect the purity and wholesomeness of milk" (R. 1734).

Similarly the majority opinion of the Circuit Court of Appeals said:

> "It is true the record discloses some evidence in support of defendants' contention that the use of such containers presents a hazard to health" (R. 1794).

And the opinion of the dissenting judge said similarly:

> "The master found upon substantial evidence a number of facts bearing upon the undesirability of the use of paper milk bottles, showing clearly that at least the question of desirability of their use is debatable" (R. 1796).

This evidence is discussed at length in the petitioners' brief (pp. 40-69). Under the applicable principles of constitutional law, applied by the Illinois courts as well as by the federal courts, it is clear that the ordinance forbidding the use of paper milk containers is not invalid.

The respondent's brief cites only two Illinois cases in which public health regulations were held invalid as discriminatory and unreasonable under the Illinois constitution. The cases are *People* v. *Carolene Products Co.*, 345 Ill. 166 (1931), and *Carolene Products Co.* v. *McLaughlin*, 365 Ill. 62 (1936) (respondent's brief, p. 63). In these cases statutes forbidding the sale of "filled milk" (skimmed milk to which fat or oil other than milk fat, such as coconut oil, has been added) were held invalid. As noted in *People* v. *Quality Provision Co.*, 367 Ill. 610, 615 (1938), the prohibitions in the *Carolene Products Company* cases were invalid because the thing sought to be condemned by the legislature was the sale of a known wholesome food. It was even stipulated in the case that the product involved was wholesome. In the case at bar, both the master and the Circuit Court of Appeals pointed out that the evidence shows that there are public health hazards in the use of paper milk containers. In *People* v. *Price*, 257 Ill. 587 (1913), also cited by the respondent, the public health regulation was upheld and the decision of the

Illinois Supreme Court was affirmed in *Price* v. *Illinois*, 238 U. S. 446 (1915).

The respondent does not attempt to differentiate the many cases cited in the petitioners' brief (pp. 36-40) upholding a great variety of public health regulations imposed under the police power. We emphasize particularly *Pacific States Box and Basket Co.* v. *White*, 296 U. S. 176 (1935),* holding valid a requirement that raspberries and strawberries be packed only in certain containers, and *Koy* v. *City of Chicago*, 263 Ill. 122 (1914), upholding the validity of an ordinance requiring the use of a certain apparatus for recording the temperature of milk during pasteurization.

(b) Evidence in the record shows that the prohibition of paper containers for delivering milk is not unreasonable.

(Petitioners' brief, pp. 40-68; respondent's brief, pp. 70-90.)

Before discussing the subdivisions of this point, we have several general comments to make on the respondent's discussion of the evidence.

The respondent's emphasis on the testimony of Dr. Lloyd Arnold.

Throughout respondent's discussion are many references to the testimony of Dr. Lloyd Arnold, a witness for the petitioners. His qualifications and his testimony were noted in the petitioners' brief (appendix C, pp. 98-99). An entire page in respondent's brief (pp. 93-94) is de-

*The opinion (pp. 183-184) completely answers the respondent's vague claim (brief, p. 64) that the Chicago ordinance "fosters monopoly."

voted to an attempt to belittle his testimony. The record contains a complete answer.

The characteristics of paper containers that create public health hazards are proved in the record, not merely by the testimony of Dr. Arnold, but by the testimony of *respondent's own witnesses.* In discussing the evidence about the reasonableness of the ordinance, the petitioners' brief relied almost entirely on the testimony of respondent's witnesses because it was unnecessary to rely on Dr. Arnold's testimony. Now the respondent, instead of replying to the petitioners' discussion of respondent's own evidence, attempts to discredit Dr. Arnold's testimony. Throughout his testimony (R. 1061-1201) he stated his opinion to be that there were public health hazards in the various materials used in paper containers and in the various processes in their manufacture. The master in his report concluded that the reasonableness of the ordinance was supported by "evidence in the record, from plaintiff's own witnesses, independent of the corroborative testimony of Dr. Arnold."

The record contains abundant proof of the unusual qualifications of Dr. Arnold to testify about paper milk containers. His qualifications as shown by the record are noted in petitioners' brief (p. 98). We call particular attention to the facts that since 1927 Dr. Arnold has been a full professor in charge of the department of bacteriology and public health at the University of Illinois College of Medicine, and has acted as consultant to the Illinois State Department of Public Health. He has personal knowledge of the various processes involved in the manufacture of paper, for since 1928 he has been a consultant on the bacteriological problems involved in paper manufacture for the Kimberly-Clark Corporation, a manufacturer of a

variety of paper products (R. 1101). And during 1938 he became familiar with the processes in the manufacture of the paper used in paper milk containers, in the work done by him for the Sealrite Corporation (R. 1096, 1102).

The only other witness with approachably similar knowledge of paper manufacture was respondent's witness Dr. John Sanborn. Doctors Prucha and Tracy had made only brief visits to paper mills (R. 475, 512). Respondent's witnesses Tonney, McNally, Orvis, Woodman and Packer—all of them gave opinions about the sanitary aspects of paper containers—had never visited paper mills. Also Dr. Arnold was the only witness with medical training who had personal knowledge of paper manufacture. The respondent's witnesses Sanborn and Prucha, who had some knowledge of paper manufacture and had conducted experiments on paper milk containers, are bacteriologists with degrees of Doctor of Philosophy. So Dr. Tracy is a Doctor of Philosophy, a "dairy manufacturist" (R. 533). The witness Tonney, a doctor of medicine, had never visited paper mills (R. 921).

Paper milk containers do not promote health.

The respondent asserts that paper containers "promote health" and are "wholesome", as if they possessed health-giving properties of some kind. There is no evidence in the record to support this.

With all the possible health hazards in the use of paper containers as noted in the petitioners' brief (pp. 44-68), paper containers have but one minor advantage over glass containers from the standpoint of health. This advantage is in the delivery of milk to residences where there is a contagious disease. Paper containers are single-service containers which are thrown away by the consumer after use. Glass containers are collected from consumers and

re-used. If there is a contagious disease at a consumer's house, the possible danger with glass containers is that the person collecting and handling the used bottle before sterilization may deposit elsewhere bacteria that he may have picked up from the used bottle. The danger is thus not to the people in quarantine but to others, and consequently the last paragraph of section 3094 of the Chicago ordinance (R. 109, last paragraph) provides that milk bottles shall not be taken from quarantined premises "during the period of quarantine or thereafter, until said bottles or containers have been sterilized, and permission has been granted by the Board of Health for the removal of same." With a single-service container the same problem exists because, when the paper container is thrown away, it is collected and handled by garbage collectors who may spread the contagion. Admittedly this danger may not be as great as the danger with glass containers handled by people delivering milk. Even so, this slight advantage of the paper over the glass container involves only an infinitesimal part of the total amount of milk delivered in Chicago and is outweighed by the hazards of paper containers to consumers at large. It does not show that the City Council is unreasonable in forbidding the use of paper containers in the delivery of the 1,300,000 quarts of milk daily consumed in Chicago.

Other statements in respondent's brief not supported by the record.

Apparently in the belief that arbitrary action by the Chicago Board of Health would affect the reasonableness of the ordinance, the respondent says (p. 62) that the record shows:

> ". . . that the board of health of the City of Chicago made no effort whatever to ascertain the sanitary

properties of single service containers until almost a week after this suit was filed''

and R. 1003 is cited in support. The record refers only to testimony of the chief chemist of the board that he started making *tests* of paper milk containers in February, 1939 when the suit started. This does not show that ''no effort whatever'' was made before that time to ascertain the sanitary properties of paper containers; and, while the question was not in issue at the trial, the record incidentally shows the contrary. In 1937 Paul F. Krueger, chief sanitary officer of the board, made a trip to Urbana, Illinois, with a bacteriologist of the board to inspect paper containers and the filling machine used in the Department of Dairy Husbandry of the University of Illinois (R. 987). At conferences held at Geneva, New York, in 1937 and 1938 on the sanitation of paper milk containers, someone attended on behalf of the board (R. 191-192).

Other investigations of paper milk containers also came to the board's attention. On December 4, 1937 Dr. Lloyd Arnold made a report about paper milk containers to Dr. Herman N. Bundesen, president of the board (plaintiff's exhibit 4, R. 1397-1469). The report began by stating, ''cardboard of a satisfactory standard quality can be obtained and used for this purpose'' (i.e., in milk containers), and concluded, ''from my personal investigations and observations I see many advantages to single service paraffin coated milk containers for fresh fluid milk'' (R. 1398-1399). Dr. Arnold testified in this case that this was merely a preliminary report (R. 1149-1150) and that he later changed his opinion* about the advantages of paper

*Dr. Arnold's opinion that the paper milk container is not satisfactory from a public health point of view was affected by his consulting work done in 1938 for Sealrite Corporation, Fulton, New York, a manufacturer of paper milk containers; he advised the Sealrite Corporation of his conclusion that they are unsatisfactory (R. 1103-1104, 1201).

milk containers (R. 1103). In the spring of 1938 Dr. Arnold performed tests on the bactericidal effect of paraffin and sent the results of the tests to the board of health (R. 1131). During March and April of 1938 Dr. Arnold investigated paper containers further and found all of them to show the same type of absorption and during the last of April or in May, 1938 reported to Dr. Bundesen of the board that single service containers for milk might not be authorized safely by the City of Chicago (R. 1121-1122). Speaking of his earlier report, Dr. Arnold testified, "there are factors I did not know anything about that are operating that should be included in considering the sanitary standards of the paper container" (R. 1149). The above testimony in the record completely disproves the respondent's statement that the board of health "made no effort whatever" to ascertain the sanitary properties of single-service containers before the suit was filed.

The respondent says (pp. 68-69) that paper containers are used for a number of products in Chicago "without restriction, inspection or regulation" and R. 694 is cited in support. The record shows merely that paper containers are used for the purposes mentioned without "any objection" by the board of health and that tests are not conducted by it to determine their sanitary quality. This does not mean that other inspection devices are not used or that these containers are used "without restriction, inspection or regulation."

The respondent (p. 69) makes the amazing statement that the evidence proves "that the single service container in question has not at any place or at any time been *even suspected* of constituting a health hazard." The following articles by the respondent's own witnesses show great concern over the public health hazards in the use of paper milk containers:

"Reasonable Sanitary Standards for Paper Products," Sanborn (plaintiff's exhibit 17, R. 1507-1511).

"Sanitary Aspects of Paper Milk Containers," Prucha (plaintiff's exhibit 62, R. 1591-1599).

"Are Paper Milk Containers Sanitary?" Prucha (plaintiff's exhibit 63, R. 1600-1604).

"Microbiology in Pulp and Paper Manufacture," Sanborn (defendants' exhibit 2, R. 1665-1670).

1. Paper milk containers are not sterile when formed and do not receive effective bactericidal treatment before they are filled with milk.

(Petitioners' brief, pp. 44-47; respondent's brief, pp. 70-74.)

The respondent does not deny the *facts* stated in the petitioners' brief on this point.

The respondent does not answer the petitioners' argument that the lack of sterility coupled with he absence of bactericidal treatment before use shows that it is not unreasonable to prohibit the use of paper containers. If paper containers were sterile when manufactured (as the glass container is) or if they received effective bactericidal treatment before use (as the glass container does), there might be some ground for the claim of unreasonableness; and so the complaint in this case, which alleged that paper milk containers were sterile, may not have been subject to a motion to strike. But the combination of these two factors—whatever the evidence may be about the sanitary quality of the respondent's and other paper containers at the time of the trial—shows that there are new dangers present in their use, dangers which the City Council deemed sufficiently great to require the prohibition of their use. Aside from the real danger in their use as indicated by the evidence, the mere possibility of danger is enough to

place the matter within the discretion of the legislative body.

The respondent says (p. 73) that all its expert witnesses "were unanimous that health authorities possessed as adequate bacteriological control over paper milk bottles as they had over glass bottles." Record references are not given. We note some of the testimony apparently relied on.

The tests made by the witness Orvis on milk in glass and paper containers were made on milk from different milk plants, as the witness admitted ("I have no comparison of glass out of the same plant" R. 570), and his testimony was objected to on that ground (R. 571). Obviously the difference in the milk rather than in the containers may have accounted for the higher bacterial content of the milk in the glass containers. The testimony of this same witness about the comparative problems in glass and paper containers was of no probative value: "I *think* our problems in glass are greater, *from my limited experience so far*, than those in paper" (R. 605).

The opinion of the witness Tonney (R. 910) that the paper container represents a distinct advance over the glass milk container in the sanitary sale of milk must be considered in the light of his qualifications. He had had no personal knowledge of any of the various processes in the manufacture, converting, or filling of paper containers, except for visits of a half-day each to two dairies using paper containers (R. 921, 922, 925).

The respondent says (p. 71), citing R. 406-7 and 424, that the witness Riee "found the paper bottle superior to the glass bottle in abating the spread of infectious diseases." In his testimony this witness did state what he thought were some advantages of paper over glass containers. He mentioned the following as one:

> "the fact that the bacteria count is often housed up in it, so that the bacteria count are comparable or *sometimes* superior *if the sterilization of the glass container is not* adequate." (R. 407; Italics added.)

Obviously a particular paper container may be more sanitary than a particular glass container that has not been properly cleaned.

As the above comments show, the respondent's statement that paper containers are more sanitary than glass is not supported by the evidence apparently relied on by the respondent. Some of these witnesses based their opinions on their experiences with glass containers in places other than Chicago. The petitioners' brief (pp. 70-73) pointed out that experience elsewhere does not determine the questions at issue here. We note, however, that in places where adequate sanitary control of glass containers is not practiced the paper container may seem superficially to be an easy solution to the problem of obtaining sanitary milk containers. As the above quotation from the witness Rice shows, the bacteria count in paper containers may be less than in glass containers that are not adequately sterilized. Admittedly the paper container eliminates the problem of supervising the process of cleaning used containers. The evidence in the record here shows, however, that the paper container creates the new problem of supervising the sanitation of the many processes in its manufacture.

2. Paper containers are absorbent.

(Petitioners' brief, pp. 47-51; respondent's brief, pp. 70-74.)

The respondent minimizes the absorption of milk by the paper in its container, although, as noted in petitioners' brief, the respondent thought it sufficiently important in its

complaint to allege repeatedly that its containers are non-absorbent. The respondent says (p. 70) that only "a few drops" of milk are absorbed. This is hardly supported by the record, for the respondent's witness Prucha found the amount of absorption to be forty drops per quart container in forty-eight hours (R. 716). This is not a small amount for a container that is often used in the household for storing milk, particularly when it is remembered that Chicago's daily consumption of milk is 1,300,000 quarts. But of course the primary objection to absorption is that *absorption permits whatever is in the paper to get into the milk.*

The respondent attempts to answer this point by saying that the absorption is immaterial because there are no harmful bacteria in the paper in the container. And in support of this statement the testimony of numerous witnesses is relied on. For example, the respondent says (p. 71) that in the opinion of the witness John R. Rice "supported by research, absorption of milk in the paper board presented no health problem" and R. 425 is cited in support. The same witness testified that *if* the paper board is free from bacteria, absorption does not present a health problem (R. 412). With this testimony the petitioners may agree. But the record does not show that the paper used in paper milk containers, even the paper in respondent's container, is free of bacteria or of harmful bacteria. Any container that contributes bacteria *of any kind* to milk is undesirable. The respondent's witness Sanborn, writing in 1938, said that "the types of organisms *predominating* in milk container board are heat-resistant forms," implying that other forms are also present. He continued,

> "While these species are clearly not disease-producing types, it is desirable from the standpoint of general sanitation and cleanliness to hold their total numbers

to a minimum in paper to be used with perishable foods." (R. 1514.)

The respondent speaks (p. 71), of the "haphazard *inspection* of glass bottles by the petitioners, (1400 bottles being *inspected* over a period of a year—)." The record reference (R. 986) shows that the testimony was about 1400 bottles *tested* in a year. Tests of the bottles themselves are but one of the inspection devices employed in Chicago. The bottling plants themselves are inspected in detail regularly ("once or twice a week, but at least every two," R. 970-2).

The witness John R. Rice is said (respondent's brief, p. 71) to have testified that he never "found any pathogenic bacteria on any paper board used in paper milk bottles." He also testified that the paper *was not tested for pathogenic bacteria*, the only basis for the testimony quoted by the respondent being that the "gross appearance" of the bacteria "was not of pathogenic forms" (R. 413).

The witness Woodman is said by the respondent (p. 72) to have testified that "in his experience disintegration tests offered adequate protection at all times and his experiments showed that the empty paper container was essentially free of bacteria in 300 to 400 tests." The record reference (R. 680) does not bear out the statement about disintegration tests; and indeed the witness stated he "did not ever conduct any disintegration tests" and that no one connected with the Evanston Board of Health (Woodman's employer) had ever done so (R. 682). Also, while at one point Woodman said that he found the paper containers "free of bacteria" (R. 680), he admitted immediately thereafter (R. 681) that his regular rinse tests showed 7% of the containers to have more than 1,000 bacteria per container.

The respondent says (p. 73) that the United States Public Health Service "recommends the use of single-service containers." As noted elsewhere, the only "recommendation" is found in the provision in the model ordinance regulating their use (R. 1678). The Health Service has called particular attention to the "porous condition" of paper containers as "undesirable" (petitioners' brief, p. 48).

3. Paraffin from paper containers gets into the milk placed in them.

(Petitioners' brief, pp. 51-53; respondent's brief, pp. 74-77.)

The plaintiff says (p. 25) that there is no evidence tracing any disease or illness to the paraffin from paper containers that gets into the milk. The petitioners' brief (pp. 52-53) cited cases holding that the adulteration of milk may be forbidden even though the adulterant is not harmful to health. These cases are not mentioned by the respondent.

The respondent also (pp. 74-76) stresses testimony that paraffin is not a poison and that particles of it may be swallowed without ill effects. This does not mean that it is not undesirable for children to take paraffin as a part of their regular diet, as shown by the testimony of Dr. Black discussed in petitioners' brief (p. 52). In *People* v. *Quality Provision Co.*, 367 Ill. 610 (1938), where a statute declared the addition of any derivative of sulphurous acid to food to be an adulterant, it was held valid to prohibit the use of sodium sulphite, a derivative of sulphurous acid, as a preservative in sausage, although the testimony showed that sodium sulphite is used medicinally (see opinion, p. 611).

The respondent contends that the provision of the Illinois Criminal Code cited by petitioners (brief, p. 53) has no bearing on this case. Admittedly the respondent is not being prosecuted here for violation of the criminal code. The broad language of the section—prohibiting the addition of *any* foreign substance to milk—indicates the great lengths to which the Illinois legislature has gone in protecting the milk supply from foreign substances.

4. Odors from paraffin and bacteria in paper containers are imparted to the milk.

(Petitioners' brief, pp. 53-56; respondent's brief, pp. 78-81.)

The petitioners stated (brief, p. 54) that the act of the respondent's witness Dr. Sanborn in smelling a container and the witness's testimony about this proved that the paraffin in paper containers has an odor. This undisputed fact is not disproved by pointing out, as the respondent does (brief, p. 78), that Dr. Sanborn testified that he did not know at what temperature paraffin oxidizes and becomes rancid. A fact is not disproved by showing that a witness did not know why the fact occurred.

While the petitioners may not have produced a witness to testify here that in his experience paraffin and bacteria contribute odors to the milk in paper containers, the evidence discussed in the petitioners' brief shows that paraffin and bacteria *may* contribute odors to the milk. This alone is enough to form a basis for a controlling legislative discretion.

The respondent notes (p. 79) that the testimony of its witness Peterson, who testified about paraffin, was "uncontradicted and unimpeached." This is so only if the testimony of respondent's witnesses Keyser (R. 1347-8) and

Sanborn (R. 303-304) is disregarded. Peterson has "served as salesman, engineer and technical engineer" for the Standard Oil Company of Indiana, which manufactures the paraffin used in paper milk containers (R. 942-3). The tests he described (and on which the respondent relies, p. 79) were made to convince the Ex-Cell-O Corporation to use his company's paraffin (R. 944).

5. Effective sanitary control of paper containers requires supervision and control of all processes in the manufacture of paper and its conversion into containers.

(Petitioners' brief, pp. 56-67; respondent's brief, pp. 81-86).

The fundamental error in the respondent's discussion of the point is seen in the statement,

> "The evidence is undisputed that the public health authorities have just as much control over the sanitation of the paper milk container after it reaches the confines of the City of Chicago where it is subject to physical and chemical tests as they have over glass milk bottles * * *." (Respondent's brief, p. 85.)

One basic fact about the sanitation of glass containers is that they not only are absolutely sterile when manufactured (R. 169) but receive bactericidal treatment before each use and with the best method of sterilization it is possible to obtain a sterile glass bottle "according to bacteriological tests" (R. 170). The bactericidal treatment at the local dairy can be thoroughly inspected and controlled locally and, as shown in the petitioners' brief (pp. 60-61), this is done in Chicago. Aside from the application of hot paraffin, which "is not an effective sterilizing agent" (R. 194), there is no local bactericidal treatment of paper containers.

The respondent describes (p. 82) the testimony of Prucha as "forceful and persuasive that the mere passage of time is a great purifier, particularly with respect to the harmful type of bacteria," and cites plaintiff's exhibit 46 (R. 1572). This exhibit represents a test made on September 6, 1939 (R. 632), and was testified about (R. 632-40) on September 12, 1939. The test purported to show that bacteria with which paper is innoculated are completely absent in nine hours as the result of a "self-purification" process, and that they are almost all killed in 60 minutes (R. 1572). Dr. Prucha testified, however, that he only tested the samples for the prodigiosus bacteria with which the paper was innoculated, and that "there were other types of non-spore-forming bacteria present in the paper after the expiration of the periods of time described in that exhibit"; the non-spore-forming bacteria are the more dangerous type (R. 780). Dr. Prucha's own testimony thus shows that plaintiff's exhibit 46 is not persuasive evidence of what it purports to prove.

The respondent also (p. 84) refers to testimony by Dr. Prucha that "by his bacteria counts on paper board he could determine whether it would be fit to be used for milk containers." The record reference (R. 838) shows that the particular counts referred to were those shown in defendants' exhibit 7 (R. 1671). Out of 70 samples of paper to be used for paper milk containers, 42 contained more bacteria than the standard of the United States Public Health Service of 100 per gram (R. 792-3). Obviously a high count of bacteria would indicate that the paper was not fit for milk containers. What makes the tests unreliable is that an inaccurate *low* count would indicate that the paper was fit for milk containers. There appears to be a clear conflict in the testimony of Dr. Prucha about the necessity of inspect-

ing paper mills. (Cf. petitioners' brief, p. 58, and respondent's brief, p. 84.)

The respondent (pp. 83-84) relies on testimony of the witnesses Orvis, Tonney, and Woodman that they did not believe inspectors had to visit paper mills. And the respondent says that Tonney was "thoroughly familiar with . . . the paper bottle operations" (p. 83). Tonney had never visited a mill making paper for milk containers (R. 921) or a converting plant (R. 922), and his knowledge of the filling of paper containers was based on visits of a half day each to two dairies (R. 925). The witness Orvis testified that he had never been in a paper mill (R. 573). The witness Woodman, when asked about operations at a paper mill, said, "I will have to tell you that I know nothing at all personally about any of that at the plant" (R. 684).

6. Paper containers are not transparent and cream does not rise to the top in them.

(Petitioners' brief, pp. 67-68; respondent's brief, pp. 86-90.)

The respondent (p. 88) refers to the witness Orvis as having testified that "the cream line does not necessarily determine the amount of butter-fat in particular milk." His testimony (R. 573) does not go as far as the respondent indicates:

> "You may get types of milk in which the cream line may not be very clear, but it is *generally* a comparable basis and not an absolute basis." (Italics added.)

The plaintiff does not refute this argument by pointing out (p. 87) that homogenized milk is permitted to be sold in Chicago. As shown by the definition quoted by the plaintiff, homogenized milk is mechanically treated for the very purpose of diffusing the cream throughout the milk. Also,

the stipulation in the record includes a fact not mentioned by the plaintiff: *the homogenized milk being sold is labelled and sold as such* (R. 1332).

(c) Factors relied on by the District Court and in the majority opinion of the Circuit Court of Appeals are not controlling.

(Petitioners' brief, pp. 69-78; respondent's brief, pp. 90-104).

Weakness of presumption that ordinance is valid.

In attempting to support the dictum in the majority opinion of the Circuit Court of Appeals that the presumption of validity is "little more than a shadow," the respondent overlooks the fact that the presumption is in reality a self-imposed restriction, applied by the courts under the doctrine of the separation of powers, to avoid interference with the function of the legislature. It is a presumption of law and operates whether or not there is evidence that the members of the legislative body actually considered the factors that would support the validity of their action. Consequently the time element is of no importance.

Use of paper milk containers elsewhere.

The petitioners' argument is that on the facts and under the law the use of paper milk containers elsewhere is immaterial. The respondent attempts (brief, pp. 91-92) to answer this contention by referring to the testimony of health officials of Chicago suburbs about the use there of paper containers and by quoting at length in its brief (pp. 96-99) a number of letters from health officials about paper milk containers. The respondent does not deny that the record shows, as pointed out in the petitioners' brief (pp.

71-73), that the precautions taken in some municipalities as to paper milk containers are in fact very inadequate.

This is true also of the testimony to which the respondent now refers (pp. 91-92). For example, respondent cites the testimony of Woodman, an Evanston health official, that he did not consider it necessary to inspect paper mills or fabrication plants (R. 675). The same witness testified that he had never been to a paper mill where paper milk containers are made (R. 684). Respondent says that Evanston made 300 to 400 tests "*before* use of the paper bottles was permitted." The record shows that the tests, which were merely rinse tests, were made *after* the use began (R. 679-680) and the samples tested were not picked at random but were submitted by dairies (R. 673, 680). Woodman testified that paper containers were being used in Evanston without any regulations whatsoever pertaining to their manufacture and handling (R. 684). He also testified that, while tests were made, they did not "test the quality of the paper at all" (R. 684). Similarly the respondent refers to the opinion of Orvis, health officer of other Chicago suburbs, that the bacteriological control of paper containers equals that of glass. This witness had never been to a paper mill where paper containers are made (R. 583-584), although the respondent's witnesses Sanborn and Prucha state that milk sanitarians should inspect paper mills (petitioners' brief, pp. 58-59). In the municipalities for which Orvis was health officer paper milk containers had been in use for some time at the time of the trial and none of them had regulations concerning the manufacturing of the paper (R. 580). The respondent points out that these municipalities were sent monthly reports on the bacterial content of paper board by a Dr. Jordan and R. 583 is cited in support. Orvis testified at first that Dr. Jordan

himself selected the samples of paper for testing, but he later admitted that the source of information on this fact was a man at the plant of the Fieldcrest Dairy (R. 588-589). The testimony relied on by the respondent does not show that municipalities permitting the use of paper milk containers exercise proper sanitary supervision over them.

Experience elsewhere is a matter addressed to the discretion of the legislative body. Even if convincing evidence had been presented that health officers where paper containers are used can and do exercise adequate sanitary control over them (and the evidence here is otherwise), the court would be going far afield in making an investigation of the experience everywhere in order to determine the reasonableness of the ordinance. Yet this was the factor on which the majority opinion of the Circuit Court of Appeals relied in indicating that the ordinance is unreasonable.

The respondent says (p. 92) that the "daily sale of milk in single-service paper containers in Chicago by restaurants and drug stores was not actually prohibited or interfered with by the City or its Board of Health at any time" and R. 940 is cited in support. The reference is to the testimony of Frank H. Bergman, the manager of a restaurant in Chicago. His testimony was very brief. After identifying a paper container, he was asked if he had received "any instructions from the Board of Health of the City of Chicago that you are not to use these paper containers in the sale of milk." The witness' answers were: "Never that I know of"; "I don't remember"; "That would go to our main office"; "No, I could not tell you of any" (R. 940). This testimony clearly does not support the respondent's statement. And the regulation of the Chicago Board of Health, quoted in petitioners' brief (p. 77n), shows that the sale of milk in paper containers by restaurants and drug stores is prohibited.

The letters quoted in the respondent's brief (pp. 96-99) from health officials obviously were incompetent evidence. The letters contained opinions of the writers and were hearsay.

Respondent (p. 101) quotes from the opinion in *Standard Oil Co.* v. *City of Marysville*, 279 U. S. 582 (1928), and implies that the following quotation does not state the Illinois law:

> "We may not test in the balance of judicial review the weight of sufficiency of the facts to sustain the conclusion of the legislative body."

This same principle was stated by the Illinois Supreme Court in *People* v. *Price*, 257 Ill. 587 (1913), quoted recently in *People* v. *Quality Provision Co.*, 367 Ill. 610, 614 (1938), the court saying of a disputed question of the reasonableness of a health regulation:

> "In such cases in enacting legislation in the exercise of the police power of the State the legislative declaration that it is unwholesome must be accepted by the courts, and they will not investigate the facts for the purpose of determining whether the declaration of the legislature was warranted by the facts."

The respondent says (p. 102) that the distinctions between milk and other foods packaged in paper containers are "superficial." This was not the opinion of the respondent's leading witness Sanborn when he said that milk was the most perishable and easily contaminated food that is placed in paper containers (R. 1495). Nor was it the view of the Illinois Supreme Court when it said in *Koy* v. *City of Chicago*, 263 Ill. 122, 130 (1914),

> "There is no article of food in more general use than milk; none whose impurity or unwholesomeness may more quickly, more widely and more seriously affect the health of those who use it."

Here again the respondent says (pp. 102-103) that the Chicago Board of Health "has made no effort to prevent" the practice of the sale of milk in paper cartons by soda fountains and restaurants. Any sale so made violates a regulation of the board (R. 1697).

IV.

The respondent's paper containers are not "standard milk bottles".

(Reply to respondent's Point IV, pp. 106-115.)

There is a preliminary procedural question about the raising of this point by the respondent. The Circuit Court of Appeals held (opinion R. 1784-1788) that the trial court erred in holding, contrary to the master, that the respondent's paper container is a standard milk bottle. This required a modification of the trial court's decree and the judgment of the Circuit Court of Appeals (R. 1797) was that the cause should be remanded to the District Court "for the sole purpose of modifying the decree so as to conform with the views expressed in the opinion of this court." The decree of the trial court (R. 1759-1760) contained a declaratory judgment that "the plaintiff's Pure-Pak single service paper milk bottle is a 'standard milk bottle' and that the same conforms with the city ordinances of the City of Chicago." On remandment of the cause, this declaratory judgment would have to be modified. In this court the respondent (without having filed a cross-petition for certiorari) now argues that the holding of the Circuit Court of Appeals on this point was erroneous. In this state of the record it may be that the respondent is not in a position to object to that portion of the decree unfavorable to it. The cases seem to indicate that this court exercises a wide discretion in considering objections urged by

respondents. See *Langnes* v. *Green*, 282 U. S. 531, 537-539, (1930); *Letulle* v. *Scofield*, 308 U. S. 415, 421-422 (1939).

In view of the fact that the construction of the ordinance is a peculiarly local question, it would seem that there is a good reason for this court not to review the ruling of the Circuit Court of Appeals. Nevertheless, we do not urge this court to rule one way or the other on the procedural point and we proceed to argue the question on the merits.

• • • • • • •

The respondent seems to think that the case of *City of Chicago* v. *Ben Alpert, Inc.*, 368 Ill. 282 (1938), is inconsistent with the case cited by the Circuit Court of Appeals, *People* v. *Barnett*, 319 Ill. 403 (1926) and that the later case alone destroys the construction of the ordinance by that court. The cases are not inconsistent.

In the *Barnett* case a statute passed in 1887 when only men had the right to vote provided that jurors should be chosen from a list of "electors." Later when women were given the right to vote in Illinois, a woman sought to compel the jury commissioners to list her as a juror. It was held that the Illinois legislature, in using the word "electors" in 1887 meant only male electors, the opinion saying (p. 410):

> "The legislative intent that controls in the construction of a statute has reference to the legislature which passed the given act (25 R.C.L. 1029). Applying the rule of construction therein mentioned, it is evident when the legislature enacted the law in question, . . . it was intended to use the words 'electors' and 'elector' as the same were then defined by the constitution and laws of the State of Illinois. At that time the legislature did not intend that the name of any woman should be placed on the jury list, and must be held to have intended that the list should be composed of

> the names of male persons only. *In interpreting a statute the question is what the words used therein meant to those using them.*" (Italics added)

In considering a similar question in *Commonwealth* v. *Welosky*, 177 N. E. 656, (1931) Mr. Chief Justice Rugg said (p. 659):

> "General expressions may be restrained by relevant circumstances showing a legislative intent that they be narrowed and used in a particular sense."

In the *Barnett* case the general expression "electors" was restrained by the circumstance at the time of its use that only men had the right to vote. In the case at bar, if the term "standard milk bottles" considered out of its context is a general expression, the circumstance that in 1935 milk had been delivered for decades in glass containers of a typical shape called "milk bottles" shows a legislative intent that the term was used in a particular sense to mean the typical container known to the City Council. This is apparent from the discussion below of the meaning of the term.

In the *Ben Alpert* case the word involved was the word "garages" used in a 1911 Illinois Statute (Ill. Rev. Stats. 1937, par 65.81, p. 353) that gave the city power:

> "To direct the location and regulate the use and construction of breweries, distilleries, livery, boarding or sale stables, blacksmith shops, foundries, machine shops, garages, laundries, and bathing beaches within the limits of the city or village."

The question presented was whether or not an open-air parking space or, what was commonly known, as the court said, as "an open-air garage," was within the grant of regulatory power. What the statute did was to authorize the regulation of the *businesses* mentioned in the statute. The

purpose of the statute was not to provide for regulation of structures or premises wherein the businesses were carried on, but of the businesses themselves. In other words, in using the word "garages" in the 1911 statute the legislature did not mean a particular type of structure or particular premises then used as garages, but the garage business as it then existed or as it might exist in the future, whether carried on inside or outside of a structure. In the *Ben Alpert* case the court followed the rule of the *Barret* case —it considered "what the words used therein meant to those using them." The legislature used "garages" in a broad sense. The Chicago City Council, in using the words "standard milk bottles," did not have a similar intention. Obviously there would be no point in an ordinance imposing sanitary requirements to say that whatever has any widespread use in the future may be permitted. Moreover, the evidence in this case shows that paper milk containers had not come to be known as "milk bottles" at the time of the trial. It was an admitted fact in the *Ben Alpert* case that the word "garages" at the time of the trial included open-air parking spaces in common acceptation.

* * * * * *

The pertinent language in the Chicago ordinance about the delivery of milk is as follows:

> "Any milk or milk products sold in quantities of less than one gallon shall be delivered in *standard milk bottles;* * * *" (from third sentence of Sec. 3094 of the Revised Chicago Code; R. 108; italics supplied).

The petitioners contend that the Chicago City Council, in using the term "standard milk bottles," did not intend to permit the delivery of milk in paper containers such as the respondent's Pure-Pak cartons. The intention of the City Council was to permit the delivery of milk in quantities of

less than one gallon only in glass containers of the kind described to everyone by the words "milk bottle." As between two glass milk bottles of only slightly different shapes and thicknesses, it may be difficult to decide whether one or the other is a "standard" milk bottle. But there is no difficulty in determining that a paper milk container is neither a standard milk bottle, nor a milk bottle, nor even a bottle.

"Standard Milk Bottles" as a Term of Common Usage.

The ordinance was passed by the City Council on January 4, 1935 (R. 23). At that time (and it is also true at the present time) the use of paper containers for delivering milk was a comparatively recent development. The development began in 1928, and paper milk containers were "rather widely used" in about 1936 (R. 152). In 1938 their use was concentrated in eastern states, with scattering uses elsewhere (see Paper Milk Bottle Map, 1938, R. 1479). For many decades before the passage of the ordinance, milk had been delivered in Chicago in less than gallon quantities in the familiar glass milk bottles, and this was generally true throughout the country.

> (For a photograph of glass milk bottles, some of which are of the shape used in Chicago, see plaintiff's exhibit 14, R. 1495; also see plaintiff's physical exhibits 26 and 27 for quart and pint glass milk bottles R. 277.)

In the common speech of 1935 (and of today), the two words "milk bottle" convey a clear idea of a container of characteristic material and shape, both of which have been determined by the function of the milk bottle as a receptacle for carrying and storing a staple, easily contaminated liquid. The glass material gives the milk bottle an impervious surface which does not absorb the milk and

which is easily cleaned. The cylindrical shape of the bottle, the sloping shoulders, and an adequate mouth make for easy cleaning, but the neck is narrow enough to permit the hand to get a good grip in pouring. So widespread has been the use of the words "milk bottle," as descriptive of this container, that there is no need to resort to lexicons to determine their meaning. Everyone knows how the term is now used and has been used for decades. Everyone—even a three-year old child—would have no difficulty in selecting a milk bottle from an array of different kinds of bottles—beer, medicine, whiskey, wine, and milk.

The history and wide use of this bottle explain the prevalence of the generic term "milk bottle" in common speech. It was in 1884 that the glass milk bottle, similar in shape to those in evidence in this case, was invented by a Dr. Thatcher and placed on the market. This is pointed out in an article, "Few Changes Made in Milk Bottles Since First Marketed in 1884," *The Milk Dealer* (Olsen Publ. Co., Milwaukee), November, 1935, vol. 25, p. 56, where it is also said:

> "An interesting thing noted by all who examine one of the first milk bottles, proudly preserved, is the very small changes that have been made in the form of the bottle in half a century. The glass top and awkward bail have given way to the cardboard or paper cap, metal cap, and hood cap, and the neck has been made more graceful. Some bottles display knobs or flutings to aid in handling or to obtain individual appearance. At least one type of bottle has a neck shaped to make more simple the extraction of the cream but, on the whole, the bottle of today is faithful to the form adopted by Doctor Thatcher."

The United States Biennial Census of Manufacturers, 1935, indicates that milk bottles have constituted a distinct class of bottles and have been produced in great numbers. The

Census divided glass products into three classifications, one of which was glass containers, and milk bottles were listed as one of the classes of glass containers. The Census stated the 1935 production to be 2,123,873 gross of bottles having a value of $10,980,124.

The use of the adjective "standard" before the words "milk bottle" does not expand but merely emphasizes the common meaning of the latter words. Again, everyone is familiar with the word "standard" as descriptive of what is recognized as a familiar type or criterion. In using the word "standard" the City Council thus stressed its intention to describe the milk bottle with which everyone is familiar—that is, made of glass and having the characteristic shape; and certainly not made of paper.

Illustrative of this meaning of the words "standard milk bottles," are many uses (all furnished by the respondent) of the words "bottles," "milk bottles," and "standard milk bottles" in the record in a sense excluding paper containers:

(a) The respondent's witness Tracy, who operates a commercial dairy at the University of Illinois, was questioned about the meaning of the words "standard milk bottle" (R. 499-501). In answer to questions of the master, he said at one point, "The only standard milk bottle is the one that is the standard glass milk bottle, that I know of" (R. 499) and, when asked what was meant by "standard milk bottle" in Chicago, if paper containers were not used there, he replied, "I would expect them to mean a glass bottle" (R. 500).

(b) The respondent's witness Orvis, health officer of Winnetka, Illinois, when asked by respondent's counsel if he knew "*in the trade or in your profession* of anything *commonly* known as a standard milk bottle," replied,

"Standard milk bottle is a *glass* container of specified content and certain labeling" (R. 574; italics supplied).

(c) The respondent's witness Woodman, for many years a health officer in Evanston, where paper containers had been used for several months at the time of his testimony, used the word "bottle" several times to differentiate a glass milk container from a paper milk container (R. 675, 679, 681), with the result that respondent's counsel corrected him (R. 679, 681).

(d) The officers of the respondent itself are apparently accustomed to use the term "bottles" as excluding paper containers, or were so accustomed before the present litigation began. In the original application to the Board of Health for permission to use paper containers, Mr. S. E. Dean (President of the Dean Milk Company, of which the respondent is a wholly-owned subsidiary) wrote on January 13, 1936 that he would like to present to the Board of Health the facts about "delivering milk to the City of Chicago in paper containers *instead of bottles*" (defendants' exhibit 22, R. 1692; italics supplied).

The United States Public Health Service has construed "standard milk bottle" to exclude paper containers. The form of the June, 1939, amendment to the Health Service's model ordinance—adding "or in single-service containers" after "standard milk bottles" (defendants' exhibit 17, R. 1678)—indicates unmistakably that the original language was not believed to include paper containers. The word "bottles" was not changed, nor were the words "including paper containers" added. The use of the connective "or" shows clearly a belief that "standard milk bottles" did not include paper containers. The persistence of this meaning of "standard milk bottles" in common usage is illustrated again in the record by the language of George

D. Scott, sales manager of the manufacturer of machines for filling respondent's container. In a sales letter to the president of the Board of Health, dated August 2, 1938, he said of the Health Service's model ordinance:

> "True, its fundamental principles were written a good many years ago, and *would not include the present, more sanitary milk receptacle—because it was then unknown*" (defendant's exhibit 23; R. 1694; italics supplied).

Common usage alone thus indicates that by "standard milk bottle" the ordinance describes a glass container for milk of the familiar shape, and does not describe a paper container for milk of a novel shape. There could be no better proof of this usage than that in the record—the speech of practical men of experience in the dairy industry, as Tracy, Woodman, Orvis, Dean, and the language used by the draftsmen of milk legislation, including the Advisory Board of the United States Public Health Service.

In construing legislation, there is no need to resort to extraneous aids to construction when common usage indicates the meaning of the language used. In *Sproles* v. *Binford*, 286 U. S. 374 (1931), Mr. Chief Justice Hughes said (p. 393):

> • • • • "The requirement of reasonable certainty does not preclude the use of ordinary terms to express ideas which find adequate interpretation in common usage and understanding. (Citing cases.) The use of common experience as a glossary is necessary to meet the practical demands of legislation • • •."

And in *Sup* v. *Cervenka*, 331 Ill. 459 (1928), the court said (pp. 461-462):

> "It is an elementary rule in the construction of a statute that the intention of the legislature must pri-

marily be determined from the language of the statute itself and not from conjectures *aliunde*. When the meaning of the language is plain and unambiguous and conveys a clear and definite meaning, there is neither necessity nor authority for resorting to statutory construction. If the words of a statute are plain and the legislative purpose manifest, that purpose must be given effect."

Definition of "Standard Milk Bottles" Derived from Lexicons.

The definitions of "bottle" and "standard" in dictionaries strongly support petitioners' contention that paper milk cartons are not included in the phrase "standard milk bottles."

The following-named dictionaries define "bottle" as indicated:

New English Dictionary (Oxford, 1888):

"1. A vessel with a narrow neck for holding liquids, now usually made of glass; originally of leather."

Encyclopedia Americana (1936), Vol. 4, p. 317:

"*Bottle*, a vessel designed to hold liquids, constructed of various materials and in various forms according to the necessities of local manufacture and the demands of the kind of liquid to be enclosed. *It is now understood to mean a vessel made of glass, with a more or less narrow neck and mouth.* In ancient times, however, the bottle was nothing more than a skin of some animal. • • • The ordinary bottle is, however, of glass. *The various bottles used for different well-known purposes are generally distinguished by peculiar shapes and sizes*, as; for example, the English wine, beer, ale and soda bottles, the French champagne, Burgundy and claret, and the Rheinish wine bottles. • • • In 1927 about four billions of bottles and jars were turned out in United States, ranging in size from small druggists' glass containers to bever-

age and *milk bottles,* fruit and pickle bottles, demijohns and carboys." (Italics supplied.)

Webster's New *International* Dictionary (2d Ed., Unabridged, 1937):

"A hollow vessel of glass, earthenware, or the like, usually with a comparatively narrow neck or mouth, and without handles. Bottles of skins of animals, as of goats sewn up in the form of a bag and tied at the neck were used by the Hebrews, and are still in use, esp. among the ruder peoples. *Bottle* is now so loosely used that its limit of application is not well defined; it is generally distinguished from such vessels as the *jug* and *demijohn.*"

Century Dictionary & Cyclopedia:

"1. A hollow mouthed vessel of glass, wood, leather, or other material, for holding and carrying liquids. Oriental nations use skins or leather for this purpose, and of the nature of these wine-skins are the bottles mentioned in Scripture: 'Put new wine into new *bottles.*' In Europe and North America glass is generally used for liquids of all kinds, but wine is still largely stored in skins in Spain and Greece. Small bottles are often called *vials.*"

Funk and Wagnall's New Standard Dictionary:

"1. A vessel for holding, carrying, and pouring liquids, having a neck and a narrow mouth that can be stopped. Specif.: (1) a glass or earthenware vessel, usually with a flat bottom to stand on, a long neck, and a mouth stopped with a cork. (2) a skin for holding wine, oil, etc.: * * * (3) Any of various receptacles serving as a bottle."

New Century Dictionary (1927):

"A vessel, now commonly made of glass, with a neck or mouth that may be closed with a stopper, for holding liquids: * * *."

Webster's New *American* Dictionary (1939):

> "1. A glass container for liquids, having a neck and no handles, and closed with a cork or stopper."

From these definitions, it is apparent that a "bottle" has certain characteristics, as the word is used today: (1) the material of which the vessel is made—glass; (2) the shape of the vessel—a relatively narrow neck and mouth. Paper containers are not made of the material—glass—of which bottles are usually made, or of a material of which bottles have ever been made in the past. And paper milk containers do not have necks.

Paper milk containers are thus excluded by the word "bottle" alone. The exclusion is even more positive when the word "milk" is added, for a paper milk container has no identity in material or shape with the glass vessel used for delivering milk. Under its definition of "milk," Funk and Wagnall's New Standard Dictionary notes: " 'Milk' is the first element in some of self-explanatory compounds; as milk-bottle, milk-can, etc." If paper containers are construed to be bottles, tin cans are bottles, beer cans (for example) are beer bottles, and milk cans are milk bottles.

The dictionary definitions of the word "standard" indicate that, as used in "standard milk bottles," it merely limits the two other words to the meaning of milk bottles of the familiar type. In Webster's New International Dictionary (2nd Ed., Unabridged, 1937), the adjective "standard" is defined in terms of the same word used as a noun:

> "1. Being, affording, or according with, a standard for comparison and judgment * * *."

And the noun "standard" is given the following definitions (among others):

Webster's New International Dictionary (2d Ed., Unabridged, 1937):

> "5. That which is established by authority, custom, or general consent, as a model or example; criterion; test; in general, a definite level, degree, material, character, quality, or the like, viewed as that which is proper and adequate for a given purpose."

Funk and Wagnall's New Standard Dictionary:

> "Having the accuracy or authority of a standard; serving as a gauge, test, guide, or model; hence of a very high or excellent kind or type, as, *standard* scales; a *standard* book.
>
> 1. Any measure of extent, quantity, quality, or value established by law or by general usage and consent; a weight, vessel, instrument, or device sanctioned or used as a definite unit, as of value, dimension, time, or quality, by reference to which other measuring-instruments may be constructed and tested or regulated.
>
> 2. Hence, any type, model, example or authority with which comparison may be made; any fact, thing or circumstance forming a basis for adjustment and regulation; a criterion of excellence; test; as, a *standard* of conduct; a *standard* of test."

The Century Dictionary (1889):

> "3. That which is set up as a unit of reference; a form, type, example, instance, or combination of conditions accepted as correct and perfect, and hence as a basis of comparison; a criterion established by custom, public opinion, or general consent; a model."

In the New English Dictionary (Oxford, 1919) Vol. IX, Part I, p. 816, the adjective "standard" is given the following definition:

> "B.I. i. b. Having the prescribed or normal size, amount, degree of quality," etc.

Thus the adjective "standard" may have a definite meaning: that which is established by custom or general

consent as a model or example or having the normal size or degree of quality. In other words, it means "of the normal, the ordinary, the well-recognized kind." It would perhaps have been sufficient for the ordinance to say simply, "milk shall be delivered in milk bottles," but this requirement was made more certain by the addition of the word "standard," indicating with greater precision that what was meant was the ordinary milk bottle, known everywhere and by everyone as such. Obviously, paper containers do not comply with this standard.

The dictionaries thus confirm the common understanding that the term "standard milk bottles" does not include paper containers. The opposite result can be reached only by a violent misconstruction of language.

Apparently there is but one instance other than in this case where a judicial construction of "standard milk bottle" was sought. In *Uservo, Inc.* v. *Selking*, 217 Ind. 567, 28 N. E. 2d 61 (1940), discussed by the respondent (brief, p. 110), an injunction decree provided that, in the exchange of milk bottles between a bottle dealer and a dairy, the dealer might make up an excess "by delivering standard bottles in good usable shape." A controversy developed about the bottles delivered, the dairy contending that the bottle dealer delivered bottles not standard in that the necks and cap seats were slightly larger than the bottles it had been using. In holding the decree unenforceable because the term "standard bottles" was indefinite, the court said (28 N. E. 2d 63):

> "It will be noted that the phrase 'standard bottle' is not defined in the order. There seems to be no universal or well defined meaning of what does or does not constitute a standard milk bottle. It was contended with much vigor in this case, that what might be a standard bottle in one city in Indiana might not be regarded a standard bottle in another."

There it was obviously difficult to tell, as between glass bottles with slight variations in the neck and cap seat, whether one or the other was a "standard" milk bottle. On the other hand, in the instant case, it is easy to tell that respondent's paper container is not a "standard milk bottle." As to the issues in the instant case, the phrase "standard milk bottle" is not indefinite. Indeed, the *Uservo* case, by illustrating the difficulties in applying the term "standard" to bottles slightly dissimilar, emphasizes the great dissimilarity between respondent's paper container and a standard milk bottle.

Petitioners' contention that the term "standard milk bottles" in the 1935 ordinance does not include paper containers is not based on the ground that paper containers were then unknown to the City Council. The ground is that the City Council in using the term intended to use it in the sense in which it was usually used at that time; and one element in that sense is that the material of standard milk bottles is glass, the result being that paper containers are excluded by the term. This is true even though the existence of paper containers may then have been known to the City Council.

Outstanding in respondent's argument on the construction of the ordinance are two related defects. *There is no discussion whatever of the meaning of "milk bottles" as a separate term.* Also respondent's brief misses the point that we are here seeking the intention of the Chicago City Council in the year 1935 in using the words "standard milk bottles."

In using "bottles" the City Council did not intend to permit the use of a container made of any kind of material that has ever been used or that might possibly be used in a thing termed "bottle," as the trial court in effect held.

The intention must be sought from the sense in which the word is *usually used*, not from the sense in which it might possibly have been used in the past or might possibly be used now. Obviously the City Council is likely to have used the word in the sense in which it was usually used in 1935. All dictionaries, as shown above, say that bottles are usually made of glass and have a narrow neck. Added to this are the facts (a) that the purpose of the ordinance was to fix the kind of container to be used for carrying and storing milk, a purpose for which glass with its impervious surface is peculiarly suited and (b) that the prior practice for decades had been to use glass containers for this purpose. The inevitable conclusion is that the City Council in using the word "bottles" meant glass containers.

But there is an even more serious defect in respondent's argument. The City Council did not use the word "bottles" alone. It used the compound term "milk bottles." In the common usage of the household as well as of the dairy industry, "milk bottle" means a glass container with a characteristic shape. The broad word "bottle"—describing what is and has been *usually* made of glass—is greatly narrowed by putting the word "milk" before it to make the compound term "milk bottle"—describing what has *always* been made of glass. Since the common usage of 1935 and of today attributes a fixed meaning to "milk bottles" (one of the elements being that the material of which they are made is glass), it is clear that the City Council did not intend to include paper containers in requiring milk to be delivered in milk bottles.

The respondent's entire approach to this issue is based on an erroneous conception of the method of interpreting language. Its argument not only disregards the importance of common usage, stressed in the cases cited above, but also disregards the necessity of looking to the circum-

stances surrounding the enactment of the ordinance to determine *the meaning of the words used to the persons using them.* For example, the respondent says (brief, p. 112):

> "We therefore respectfully submit that the question in this case is not what was meant by a 'standard milk bottle' precisely at the time the ordinance was adopted, but what is meant by 'standard milk bottle' at the time the ordinance is being enforced."

The result of respondent's argument on this branch of the case is that "standard milk bottles" means the same thing as "standard milk containers." Section 3094 of the ordinance shows that this is wrong. The complete text of the section is as follows:

> "The sale of dipped milk and milk products is hereby expressly prohibited. All pasteurized milk and milk products shall be placed in their *final delivery containers* in the plant in which they are pasteurized, and all certified milk and milk products sold for consumption in the raw state shall be placed in their *final delivery containers* at the farm at which they are produced. Any milk or milk products sold in quantities of less than one gallon shall be delivered in *standard milk bottles;* provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the board of health.
>
> "The delivery of milk and milk products to, and the collection of milk and milk products *containers* from, quarantined residences shall be subject to the rules and regulations of the board of health.
>
> "No milk *bottle* or other *containers* may be taken out of or away from quarantined premises during the period of quarantine or thereafter, until said *bottles* or *containers* have been sterilized, and permission has been granted by the board of health for the removal of same." (R. 108-9; italics added.)

The second sentence contains two uses of the words "final delivery containers," a broad term including receptacles of

any kind of material; and "containers" is also used elsewhere in the section. In the third sentence—the provision of the ordinance involved in this case—the containers to be used for the small quantities of milk usually delivered to homes were described by the narrower term "standard milk bottles.". If the City Council had intended "standard milk bottles" to mean the same thing as "standard milk containers," it would have continued to use the word "containers" in the third sentence as it did in the second sentence and elsewhere, instead of changing to the narrow word "bottles."

An example of the use of "bottles" in a sense excluding paper containers is found in the respondent's brief (p. 28), where item 18 of section 15 of the Illinois Milk Pasteurization Act of 1939 (ch. 56½, secs. 115-134, Ill. Rev. Stat. 1941) is quoted:

> "Item 18. *Bottling or packaging* of milk and milk products shall be done at the place of pasteurization by approved mechanical equipment." (Italics added.)

"Milk Products" are defined in section 1 (b) of the act to include only beverages. The phrase "Bottling or packaging" in item 18 of section 15 thus makes a distinction between glass and paper receptacles, the word "bottling" having reference to glass and the word "packaging" to paper containers. If "bottling" properly referred to paper containers, there was no need to use the word "packaging."

We point out here also that the respondent's container is not a "standard milk bottle" even if the broad meaning of the term constructed by the trial court were followed, i. e., even if paper containers in general may be within the meaning of the words "milk bottles." For the evidence shows that the respondent's container is not a "standard" container as the trial court interpreted the term. As to the paraffin bath used at the respondent's Chemung plant

in forming paper containers, the respondent's witnesses gave the temperature as from 170° to 172° (R. 711, 807, 904). And at the respondent's plant the container is in the paraffin compartment for only 19 seconds according to one of the witnesses (R. 904), and for 28 seconds, remaining submerged for 12 or 8 seconds, according to another of the witnesses (R. 806). These practices fall short of the requirements of the United States Public Health Service, which says that all paper containers shall be treated with paraffin "for at least thirty seconds at at least 180° F." (R. 1704). The respondent's container may not be said to be "standard" under its own definition of "standard" when it is not made in the manner required by the U. S. Public Health Service.

Conclusion.

The petitioners respectfully urge this court to reverse the judgment of the Circuit Court of Appeals.

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BOARD OF HEALTH OF THE CITY OF CHICAGO,
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Petitioners,

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vs.

FIELDCREST DAIRIES, INC.,
Respondent.

PETITIONERS' REPLY TO BRIEF OF AMICUS CURIAE, THE STATE OF ILLINOIS.

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CHAMPLIN-SHEALY COMPANY, CHICAGO 365

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PETITIONERS' REPLY TO BRIEF OF AMICUS CURIAE, THE STATE OF ILLINOIS.

The brief of the Illinois attorney general as *amicus curiae* has been filed at the last possible moment. Had the business of the court permitted, this case would have been argued and submitted two weeks before the brief of the attorney general was filed. The Milk Pasteurization Plant Law became effective in July of 1939. From that time on the attorney general could have questioned by *quo warranto* in the state courts the power asserted by the city. Or the attorney general might have appeared in either of the lower courts at any time during the pendency of this

case and asserted his present position. Instead, his appearance is made at the last possible moment before the case is to be submitted upon oral argument.

The attorney general's apparent belief that duty required him to appear is based upon a fundamental misconception of the 1939 Milk Pasteurization Plant Act. His brief says (p. 2) that he appears, for one reason, because the case involves "an important public question that affects the public interests of the People of the State of Illinois." The only interest of the people of the state in this litigation lies in having the court hold that Illinois municipalities have the powers granted to them by the state legislature, whatever those powers may be. It is not to the interest of the people of the state to have the court hold that Illinois municipalities have been deprived by the legislature of powers that the legislature preserved in them in the 1939 statute. The attorney general also appears, he says (p. 2), to request the court to "abstain from any action in this cause which may impinge the authority of the State by limiting the general application throughout the State of an Act of the General Assembly." A decision in favor of the petitioners will not affect the authority of the state in any way or limit the general or territorial application of the 1939 statute throughout the state or limit it in any other way. When the entire statute (including the saving clause) is considered, it preserves to municipalities the very powers which the attorney general seeks to strike down. The authority of the state legislature will be affected by this litigation only if the courts fail to follow the clear language of the statute.

The petitioners' reply brief contended that there was no controversy in this case between the State of Illinois and Illinois municipalities, since the state in the 1939 Milk

Pasteurization Plant Act had expressly preserved all the former powers of municipalities to regulate the milk industry. And the petitioners' reply brief (p. 5) characterized as "spurious" the controversy between the state and the city constantly mentioned by the respondent. Now at the last moment the attorney general of the state appears in opposition to the city, seeming to make the "controversy" come to life.

The mere appearance of the attorney general does not render the alleged controversy any less spurious. The petitioners concede that the state's power is paramount. There is no question here about the power of the state to regulate milk. The controversy is about the extent of municipal power and is between the respondent and the petitioners. The question is whether or not the state has impaired a power of the city. The state's sovereignty or authority is not involved. The simple problem of statutory construction presented will be solved by interpreting the language used and considering the object sought to be achieved by the legislature. The identity of the champion of one interpretation or another has no bearing on the correct solution of the problem.

It is appropriate therefore to consider what light has been shed upon the question before this court by the appearance of the attorney general. In the first place, it is not without significance that the attorney general does not request this court to refrain entirely from passing upon the construction of the statute. To the contrary, his request is simply that the court refrain from deciding the question of statutory construction against Fieldcrest Dairies, Inc. (brief of *amicus curiae*, pp. 2, 3). A consideration for the broad principles of statesmanship which prompt this court to refrain from the decision of

local questions might be expected to move the attorney general to request the court to refrain entirely from a decision of the question. This, however, is not the position which the attorney general asserts.

We may well concede that in the absence of a saving clause the position asserted by the attorney general and by the respondent would be sound. Such a concession, however, does not advance the determination of the case. A discussion of a non-existent statutory situation is not helpful. The attorney general's lack of understanding of the problem involved is clearly shown in his discussion of the saving clause (brief of *amicus curiae*, p. 7). All that is said of the saving clause is this:

> "It is submitted there is nothing in this section that might properly be interpreted as authorizing the city to outlaw the containers that the State has legalized for use within the state, in accordance with the express provisions of the Act."

This much is said. It is the sole contribution of the attorney general toward the solution of the controversy before the court. What is unsaid is most significant. The argument of the attorney general is inadequate in the same particulars as the respondent's argument (see reply brief of petitioners, pp. 8-9). The attorney general suggests no meaning that can be ascribed to the saving clause. No inference is possible from his argument save the inference that municipal control of all matters dealt with in the Milk Pasteurization Plant Law has been completely destroyed.

The logic of his argument would compel him to assert that any subject dealt with in the statute or in the "minimum requirements" adopted pursuant to it is "legalized" and so placed beyond the reach of municipal control. The

same logic would be applicable to the saving clause contained in the Grade A Milk Law, which the *state* Department of Public Health construes as authorizing municipalities to make more stringent regulations than the state (see reply brief of petitioners, p. 13), an interpretation which the respondent itself (brief, p. 32) concedes to be correct. The position of the respondent and the attorney general is that the legislature meant one thing in the saving clause of the Milk Pasteurization Plant Law, which primarily regulates dairy plants, and another thing in using similar language in the saving clause of the Grade A Milk Law, which primarily regulates dairy farms. In other words, the attorney general attributes to the legislature the anomolous intention of continuing the power of cities to regulate dairy farms (which of course are in non-urban areas) and withdrawing the power to regulate dairy plants.

The attorney general (pp. 4-6) repeats the argument of the respondent that the state's "approval" of the equipment and methods of operation of pasteurization plants and the requirement that milk must be placed in the final delivery container in the plant mean that the state "legalizes" and "approves" single-service milk containers. This is said to be the policy of the legislature. Any approval manifested by the statute is made subject to the express provision in the statute itself that permits more stringent municipal regulation. This obvious answer to the argument that the state has "approved" paper milk containers was made in the petitioners' original brief (p. 24). It has not been answered either by the respondent or the attorney general.

After discussing the Milk Pasteurization Plant Law without mentioning the saving clause, the attorney general (brief, pp. 5-6) asks this rhetorical question:

> "How could the Legislature any more clearly evidence an intent that milk which is pasteurized in a pasteurization plant approved by the State Department of Public Health, placed in containers in said plant, which containers are aproved by the Department of Public Health, and which must be sold in said original containers, may be sold in said containers at any place in the State of Illinois?"

Such a question might be pertinent if the saving clause had been omitted from the statute. A more pertinent inquiry is this: How could the legislature any more clearly evidence an intent that the police power in this field of public health protection is to be distributed between the state and its municipalities in such a manner that the minimum requirements of the state may be increased by municipalities?

The attorney general's brief (pp. 7-8) quotes a stipulation in the record about testimony which would be given by one S. V. Layson if called as a witness. The testimony relates to certificates of approval issued by the state Department of Public Health to Fieldcrest Dairies, Inc. on November 17, 1938 for the calendar year 1938 and on January 18, 1939 for the calendar year 1939. At the time of the issuance of these certificates the 1939 Milk Pasteurization Plant Law had not been enacted. Their issuance does not show that the 1939 statute impaired the city's power. And in any event the state's certificate of approval is merely evidence of compliance with state regulations; the saving clause says that municipalities may impose other and more strict regulations.

The brief of the *amicus curiae* (p. 9) contributes nothing in its attempt to show that the cases of *City of Geneseo* v. *Illinois Northern Utilities Co.*, 378 Ill. 506 (1941), and *City of Ottawa* v. *Brown*, 372 Ill. 68 (1939), have no ap-

plication here. The cases show clearly that in related situations the Illinois Supreme Court has interpretated legislative grants of municipal power as the petitioners contend the 1939 statute should be interpreted here.

The argument of the attorney general does not indicate a conflict between state and municipality. Unless his mere appearance urging that this court decide the question in favor of the respondent or not at all is effective to create a controversy, the status of the case is not affected by his appearance.

Respectfully submitted,

CITY OF CHICAGO, a Municipal Corporation,

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REPLY TO ADDITIONAL SUGGESTIONS FILED BY AMICUS CURIAE.

"Regulate" and "Prohibit".

Much of what the attorney general's brief says is answered in the briefs already filed by the petitioners. But it is important to point out the infirmity in his contention that the city's power to regulate the sale of milk does not authorize the prohibition of paper milk containers.

In discussing the relative terms "regulate" and "prohibit" the attorney general's brief overlooks the necessity of considering the subject-matter of a power to regulate. Every power to regulate necessarily includes the power to prohibit what does not meet a regulation imposed. In the

case at bar the subject-matter of the city's power to regulate is the sale of milk. The power is derived from the 1872 Cities and Villages Act giving the city power "to regulate the sale of . . . provisions" and the 1941 statute authorizing the city "to regulate the sale of all beverages" and "to . . . regulate . . . the manner in which any beverage . . . for human consumption is sold" (see brief of petitioners, pp. 13-14). The Illinois Supreme Court said in *Koy* v. *City of Chicago*, 263 Ill. 122, 131 (1914), that in the exercise of these powers a city may require "the receptacles in which milk is contained to be of prescribed character." And the saving clause in the 1939 Milk Pasteurization Plant Act provided that nothing therein impaired the power of the city "to regulate the . . . sale or distribution of pasteurized milk."

The brief of the attorney general argues as if the subject-matter of the city's power to regulate were merely paper milk containers. It may be that a grant of power merely to regulate paper milk containers would not include the power to prohibit them absolutely. But while the power to regulate the sale of milk or the manner of selling milk might not authorize the city to forbid absolutely the sale of milk, it necessarily includes power to prohibit a milk container that does not comply with the regulations prescribed under the power to regulate the sale of milk.

This obvious conclusion is not contradicted by the authorities referred to by the attorney general. There is no peculiar "federal rule" about powers to regulate, as the attorney general intimates (p. 1). His brief refers to judicial constructions of the word "regulate" noted in 36 *Words and Phrases*, 696-702. Many of the cases there cited held that statutes granting cities the power to regulate intoxicating liquor did not authorize them to pass or-

dinances absolutely prohibiting its sale. So in *People* v. *Busse,* 240 Ill. 338 (1909), where the statute granted the city power to regulate "second-hand junk stores," an ordinance imposing an absolute prohibition on second-hand junk stores in certain areas was held unauthorized. In all of these cases the entire subject-matter of the power to regulate was absolutely prohibited. In the case at bar the subject-matter of the power—the sale of milk—is not completely prohibited by the ordinance but is merely regulated.

Other Illinois cases cited by the attorney general do not support his contention. In *Haggenjos* v. *City of Chicago,* 336 Ill. 573, 576, 577 (1929), it was said, "the power to regulate implies the power to prohibit except upon the observation of authorized regulation." Applying this language here, the power to regulate the sale of milk implies the power to prohibit its sale except upon the observation of the regulation that the sale must be made in standard milk bottles. In quoting from *Chicago Motor Coach Co.* v. *City of Chicago,* 337 Ill. 200, 206 (1929) and in discussing *City of Geneseo* v. *Illinois Northern Utilities Company,* 378 Ill. 506 (1941), the attorney general overlooks the fact that in the later case the Illinois Supreme Court discounted the importance of the distinction drawn in the earlier case between powers to regulate and powers to prohibit. The Supreme Court said (p. 519) that the *Chicago Motor Coach Co.* and another case were

> ". . . the only direct authority for the contention that the Public Utilities act has taken from cities all power to permit or *prohibit* the use of a street by a public utility, as distinguished from the right to *regulate* a public utility operating in the street under a license or franchise granted by the city." (Italics added.)

And the court said (p. 530) that anything said in these two earlier cases indicating that a city's power to refuse a

license to a public utility had been repealed by the Public Utilities Act "is not adhered to."

The inconsistency of the attorney general's position is apparent from his concession (p. 5) that city regulation may be "more stringent and more detailed than those adopted by the state legislature." This concession points directly to the conclusion that the city may forbid the use of paper milk containers. The statute says only that paper containers "shall be manufactured and transported in a sanitary manner" (section 15, item 10). It does not require their use. And the certificate of approval issued by the state to the owner of a plant means only "compliance with the provisions of" the act (section 1(e), brief of petitioners, p. 80). Nowhere does the act say expressly or by implication that specific articles are "approved" in the sense of being put beyond the reach of further municipal regulation. On the contrary, the saving clause in section 19 says just the reverse.

The Attorney General's Suggestion about Disposition of the Case.

The attorney general's memorandum suggests (p. 6) that the case be decided by affirming the judgment below or by remanding the case to the district court to await the decision of a criminal prosecution to be brought in the state courts by the city against some other company using paper cartons, the injunction in the meantime to remain in effect. The unseemly partisanship of this suggestion is apparent. But there are also inherent obstacles to any disposition of the case other than full disposition on the merits:

1. The district court's holding and the Circuit Court of Appeals' statement that the ordinance is an unreasonable

regulation under the due process clause of the fourteenth amendment constitute an obstacle which, realistically considered, is almost insurmountable. The state courts will feel bound by these rulings as this court feels bound by state court rulings on local questions.

2. A police court is not an appropriate forum for the determination of a constitutional question that requires the testimony of experts.

3. If a state court action for an injunction is brought by a milk distributor, either upon a dismissal of the case at bar for want of equity jurisdiction or a remandment to the district court to await a decision of the state question in the state courts, the plaintiff will be compelled to urge that the ordinance is invalid under the fourteenth amendment. If he relies simply upon the alleged impairment of the city's power, he forfeits the opportunity to raise the constitutional question, for a rule of ancient vintage, originating in a desire to expedite the disposition of litigation, prevents him from "splitting" his cause of action.

4. The federal courts' ruling on the constitutional question will be ground for a temporary injunction in the state courts and will ensure the success of any injunction suit in the state courts, even though the state courts hold with the city on the question of the city's power.

5. The plaintiff in the state court action will be compelled (and so also will the city) to present evidence on the constitutional question. The long process of the taking of expert testimony will be repeated. The city will be compelled to defend another lengthy trial, after it has defended the trial in the case at bar on the same question with the resulting accumulation of three fat volumes of evidence.

6. The litigation over the constitutional question will continue for years to come, until finally passed upon by this court. The constitutional validity of the ordinance will remain in doubt, its enforcement prohibited by injunction. And during this period there will remain in effect the destructive holding of the district court and the similar dictum of the Circuit Court of Appeals that public health regulations are invalid when they prohibit what is permitted elsewhere.

The impractical consequences of the failure of this court to decide all issues raised would be particularly unfortunate in view of the simplicity of the local question of the city's power. The state law—the 1939 Milk Pasteurization Plant Act—clearly leaves unimpaired the power of the city to regulate the sale of milk and prescribe the type of milk containers to be used. This is apparent when the problem presented is correctly analyzed—the city's power is determined by looking to the legislative grant. The law as stated by the legislature should not be considered as the pronouncement of an inferior body. Surely this court can determine what the state law is from the clear language of the statute even in the absence of a declaration by a state court: "the law as stated by the legislature means what it says." Legislation does not require judicial endorsement to be effective.

Similarly the record in this case makes the constitutional question an easy one to decide.

We continue to urge the court to decide the case on the merits, as we have done in all the briefs filed in this court

(brief in support of petition for certiorari, pp. 36-37; brief of petitioners, pp. 31-34; reply brief of petitioners, pp. 4-6).

Respectfully submitted,

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JOINT STATEMENT OF COUNSEL CONCERNING CASE OF DEAN MILK COMPANY, AN ILLINOIS CORPORATION vs. CITY OF CHICAGO, A MUNICIPAL CORPORATION, et al., IN CIRCUIT COURT OF COOK COUNTY, ILLINOIS AND APPELLATE COURT OF ILLINOIS, FIRST DISTRICT.

MAY IT PLEASE THE COURT:

During the oral argument of this case Mr. Chief Justice Stone requested counsel for the petitioners and the respondent to submit to the court a statement about the proceedings in the Illinois courts in the case of *Dean Milk Company, an Illinois corporation* v. *City of Chicago, a municipal corporation, et al.* In compliance with this request, the parties herewith submit their statement, together with excerpts from the record of the Circuit Court of Cook

County, Illinois, case No. 40-C-4521, and from the record of the Appellate Court of Illinois, First District, case No. 41348, in the cause entitled, *Dean Milk Company, an Illinois corporation, plaintiff* (*appellee* in the Appellate Court) v. *City of Chicago, a municipal corporation, et al., defendants* (*appellants* in the Appellate Court). Some of the papers filed and orders entered in the Circuit Court of Cook County (the trial court) are reproduced in full (except for the omission of captions) and without comment; in other instances the Circuit Court and Appellate Court proceedings are summarized by counsel.

A. CIRCUIT COURT PROCEEDINGS—MAY 15 TO MAY 21, 1940.

Text of Complaint Filed May 15, 1940.

Now comes the plaintiff, Dean Milk Company, a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, by Dennis J. O'Toole, its attorney, and complaining of the defendants City of Chicago, a Municipal corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police; Board of Health of the City of Chicago; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds and Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago, alleges as follows:

1. That plaintiff is a corporation duly organized and existing under and by virtue of the laws of the State of Illinois; that the objects and purposes for which said corporation was incorporated are: to buy, sell, deal in, manufacture, process, cut, store and ship cream, milk, butter,

cheese, ice cream, ice-cream mix, sugar, condensed milk, powdered milk, evaporated milk, malted milk, distilled water, milk products and by-products, ice and all such other articles as may be necessary or may be conveniently used in connection with the aforesaid business or businesses; to own, lease and manage, directly or through subsidiaries, dairies and dairy farms, creameries and cheese factories, and conduct a general manufacturing business. That the corporate structure of plaintiff consists of 100,000 shares of common stock of no par value, of which 72,500 shares have been issued and 15,000 shares of preferred stock, the par value of which is $60 per share and of which 7,500 shares have been issued. That the reasonable value of all the machinery and equipment owned and belonging to plaintiff and which is used in the carrying on and functioning of its business is approximately $1,700,000; that the cost of three machines hereinafter more fully described which are used by plaintiff in the filling and packaging of the Grade "A" milk sold by plaintiff is in the amount of $15,000 each, and a royalty is paid to the licensor of the machines depending on the number of packages or containers used.

2. That the defendant, City of Chicago, is a Municipal corporation located in the County of Cook in the State of Illinois. The defendant, Edward J. Kelly, is the duly elected, qualified and acting mayor of the City of Chicago and is charged with the enforcement of the ordinances of said city and with the administration of the governmental affairs of said city. The defendant, James P. Allman, is the duly appointed, qualified and acting superintendent of police of the City of Chicago and as such is the head of the police department of said city, and is also charged with the enforcement of the ordinances and regulations of said city. That the defendant, Board of Health of the City of

Chicago is a board established for the city, having as its purpose the management and control of all matters and things pertaining to the health work of the city. That the defendants, Herman N. Bundesen, as President of the Board of Health of the City of Chicago, and Francis A. Dulak, Harry J. Reynolds, and Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago were duly appointed to perform and enforce all the laws of the City and the provisions of the Municipal Code of the City of Chicago pertaining to the public health and sanitary condition of the City. The said Board of Health and its members have the duty of investigating or causing to be investigated the place of business of any and all applicants for a license to sell milk or milk products in the City of Chicago as well as to investigate the vehicles, methods and equipment used by such applicants.

3. (a). That the milk and milk products sold and distributed by plaintiff are secured, pasteurized and packaged in its plant and factory located in the town of Chemung in the State of Illinois, approximately seventy-six miles from Chicago. The milk used by plaintiff is received each morning from farms which have been inspected and approved by the Board of Health of the City of Chicago, pursuant to Chapter 154 of the Municipal Code of Chicago, section 17. When the milk is received it is tested by a test commonly known as the "methylene blue" test. The milk is then weighed and placed in a tank from which tank it is run through certain equipment known as "Flash" pasteurizing equipment, which "Flash" pasteurizing process consists of heating the milk to a temperature of 161½ degrees Fahrenheit and holding the milk at said temperature for at least sixteen seconds, which method is in accordance with the Statutes of the State of Illinois, to-wit,

section 1 of an act entitled "An Act regulating the handling, processing, labeling, sale, and distribution of pasteurized milk and milk products," approved July 24, 1939.

(b). After the milk is so processed it is immediately cooled and placed in a sanitary tank connected with a machine known as the "Ex-Cell-O" machine, where it is packaged or placed in containers known as single-service containers of less than one gallon in size, to-wit: quarts, pints, and half-pints.

4. That the factory or plant of plaintiff and its equipment and the pasteurization process used by plaintiff have been approved by the State of Illinois and a permit issued to plaintiff on November 17, 1938, again on January 18, 1939, and again on April 25, 1940.

5. That prior to the issuance of each of the permits to plaintiff by the State of Illinois, its plant, equipment and method of operation were inspected by the State Department of Health of the State of Illinois and found to comply with the provisions of an act entitled "An Act regulating the handling, processing, labeling, sale, and distribution of pasteurized milk and milk products"; that attached hereto as Exhibit "B" and made a part hereof is a copy of said Act which was approved on July 24, 1939.

6. (a). That plaintiff in packing or packaging its milk or milk products causes the same to be placed by the aforesaid "Ex-Cell-O" machine in containers known as single-service containers and described as "Pure-Pak"; that said "Pure-Pak" containers are made of virgin spruce pulp, manufactured by the Cherry River Paper Company of Richwood, West Virginia. In the manufacture of these containers no other material of any kind other than virgin spruce pulp is used.

(b). The pulp used in making the containers is made from logs which are cleaned of bark and washed and chipped. The chips are then cooked for twenty hours in a sulphur-lime solution at a temperature of 250 degrees Fahrenheit, thereby killing any bacteria which might exist in the pulp. The water used in the manufacturing process is first sand-filtered and sterilized with chlorine and ammonia. In making the fibre board for the container, the pulp is passed over thirty-five hot cylinders which are heated by steam at fifteen pounds pressure. The fibre board is then free of bacteria.

(c). The fibre board is then packed and sent to Gardner-Richardson at Middletown, Ohio, where it is cut into a blank form. All the information required by section 11 of chapter 154 of the Municipal Code of the City of Chicago is then printed upon the blank form, together with the name and address of the Dean Milk Company and the quantity and quality of the product to be therein contained. The forms are packed in a sanitary sealed package and then shipped to the plant of the plaintiff. Attached hereto as Exhibit "C" and made a part hereof is one of the forms of containers above mentioned.

7. (a). The "Ex-Cell-O" machine, into which the milk is diverted for the purpose of packaging as hereinabove set forth, is a machine for the automatic forming, paraffining, filling and sealing of the blanks or containers, which when formed, make the "Pure-Pak" container. A quantity of these fibre board blanks are placed on a tray of the "Ex-Cell-O" machine and then are automatically conveyed into the machine. In the machine the containers are opened, formed and glued before they are paraffin-coated and sterilized. The paraffin used as a sealing agent on the fibre board blanks is manufactured by the Socony-Vacuum

Corporation of New York, New York, and complies with the U. S. Pharmacopeia X standard. The paraffin is preheated and passed through a filter screen and the containers are immersed therein and thereafter sterilized for thirty seconds at 172 degrees Fahrenheit. Thereafter the containers are cooled at 39 degrees Fahrenheit before they are filled with milk. All of which process takes place automatically and without being touched by human hands.

(b). That said container after being so immersed in paraffin has adhered to the interior and exterior surfaces thereof a sufficient quantity of paraffin so as to make it impervious to the absorption of its milk content as well as to prevent infiltration of moisture from the outside. The adhesive used at the bottom of the paper container before the same is immersed in the paraffin bath is not in any respect harmful and is prepared, packaged and shipped in a sanitary manner.

(c). Within sixty seconds after the containers have been sterilized they are filled with milk, which is measured automatically by the "Ex-Cell-O" machine and the top of the container is stapled with a sterilized tinned wire staple. The top of this container is stapled together with tremendous pressure, one side of the container being folded over the other in a tight seal, which from the heat of the tinned wire melts this paraffin sufficiently to reseal tightly the said fold. After being filled and stapled the containers are placed by the operator of the "Ex-Cell-O" machine in corrugated boxes, which are closed and sealed with a paper adhesive strip. Attached hereto and made a part hereof, as Exhibit "D", is a pamphlet issued by the "Ex-Cell-O" Corporation, describing the "Pure-Pak" containers and method by which they are filled with milk.

(d). After the single-service containers are filled with milk or milk products they are inserted in a cooler having

a temperature of 34 degrees Fahrenheit, which temperature is maintained at all times thereafter until the milk is ready for shipping in plaintiff's refrigerated trucks or other means of refrigerated conveyors.

8. The machinery and equipment used in the packaging and selling of milk and milk products in the "Pure-Pak" single-service containers of the plaintiff are so constructed as to prevent any part of any person or his clothing from coming in contact with any surface with which the milk or milk products come in contact in the process of packaging. All parts of said machinery and equipment can be readily cleaned and are so constructed as to prevent any foreign substance from reaching the inside parts thereof. All surfaces of the machinery and equipment with which the milk comes in contact are smooth, being of stainless steel, the same type as used by Chicago dairies. Said equipment is easily accessible for cleaning. All employees performing such work wear clean outer garments and maintain a high standard of cleanliness at all times while so engaged in said work. All the vehicles and means of conveyance used by plaintiff in transporting said milk or milk products are completely enclosed and so constructed for the purpose of protecting the milk and milk products from heat, freezing or contamination, and bear the name of plaintiff displayed in a prominent place thereon.

9. That said above described single-service containers are sterile and are light and safe in handling. That said containers after being once used cannot be used again. The manufacturing of single-service containers complies in every respect with the rules and regulations of the Board of Health of the City of Chicago and the Ordinances of the City of Chicago with regard to milk and milk products, a copy of which ordinances is hereto attached, marked

Exhibit "E" and made a part hereof. That plaintiff's place of business, its vehicles, equipment, machinery and processes used in packaging and the sale of milk and milk products are in every respect sanitary and fit for the uses and purposes of selling milk and milk products in the City of Chicago, and comply with the ordinances of the City of Chicago and the rules and regulations of the Board of Health.

10. That plaintiff's milk plant at Chemung, Illinois, where the above described pasteurization and packaging of milk in single-service containers takes places, has been inspected and approved by the Board of Health of the City of Chicago for the sale of Grade "A" milk and cream at wholesale and said approval exists at this time and has existed since June 22, 1936.

11. (a). That plaintiff has on May 2, 1940, and prior thereto, made application to the City of Chicago and Board of Health of the City of Chicago for a license or permit to sell its Grade "A" pasteurized milk and milk products packaged in the aforementioned containers, which are commonly known as single-service containers, within the corporate confines of the City of Chicago, but said City of Chicago and the Board of Health of the City of Chicago have refused to issue a permit or license to plaintiff to do same. That said refusal has been based upon Section 15 of Chapter 154 of the Municipal Code of Chicago, which is as follows:

> "Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles. Provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the board of health."

said defendants claiming that the single-service containers in which the milk or milk products of this plaintiff are packaged are not "standard milk bottles" as provided by said Code of the City of Chicago.

(b). That on, to-wit, the 2nd day of May, 1940, the following communication was addressed to the Chicago Board of Health by plaintiff:

"May 2, 1940.

Chicago Board of Health,
54 Hubbard Street,
Chicago, Illinois.

Attention Dr. Herman N. Bundesen, Pres.

Gentlemen:

As duly elected president of the Dean Milk Company, an Illinois corporation, I hereby make formal request and application for the immediate issue of a permit in the name of the Dean Milk Company to sell and distribute Grade A pasteurized milk and milk products within the City of Chicago, pasteurized and packed in single-service containers at Chemung, Illinois; said Chemung plant, as the Board knows, was thoroughly checked by representatives of the Board, and said plant now holds and has held since 1938 certificates of approval for a pasteurization plant issued by the State Department of Public Health.

I make this immediate request for a permit for the Dean Milk Company because:

1. The United States Public Health Code and ordinance has approved single-service containers.

2. The Chicago Board of Health, by formal resolution in a lawful and proper meeting on October 16, 1939, approved and recommended the use of single-service containers, as follows:

'The Board of Health recommended to the City Council that Section 154-15 of the Municipal Code of Chicago be amended by adding the words "or in single service containers" after the words "standard milk bottles" in the third sentence of such section, and

'That the Board adopt such standards as have been promulgated and recommended by the U. S.

Public Health Service for the manufacture and handling of single service containers and which are herewith attached.'

3. Lastly, because proved and satisfactory experience in 488 cities and villages throughout the United States, from a public health standpoint, have shown single-service containers to be completely satisfactory, safe and advisable.

Respectfully requested,

DEAN MILK COMPANY,
President.

SED:DL.

P. S. Right close to home in the suburbs, we find Evanston receiving the highest U. S. Public Health Rating in the annual U. S. Public Health ratings, and the members of the Chicago Board of Health know Evanston has used our single-service containers for many, many months."

12. (a). That the use of single-service containers has become standard in many places in the United States. The manufacturing and processing of the single-service containers has passed all the required tests of the respective health authorities of the following states and are now therein used:

District of Columbia,	New Hampshire,
California,	New Jersey,
Delaware,	New York,
Illinois,	North Carolina,
Kentucky,	Ohio,
Maine,	Oregon,
Massachusetts,	Pennsylvania, and
Michigan,	West Virginia.

(b). That the packaging and sale of plaintiff's milk and milk products in said single-service containers has been approved by the health authorities of municipalities about the City of Chicago. The following is a list of such municipalities in which for a considerable length of time plain-

tiff's milk and milk products in single-service containers have been sold without any harmful or detrimental effects to the persons purchasing and using the same:

Arlington Heights,
Bellwood,
Bensenville,
Berkeley,
Berwyn,
Broadview,
Brookfield,
Blue Island,
Calumet Park,
Congress Park,
Chicago Ridge,
Deerfield,
Des Plaines,
Dixmoor,
Dolton,
East Chicago Heights,
East Hazelcrest,
Elmhurst,
Elmwood Park,
Evanston,
Fairview,
Flossmoor,
Forest Park,
Franklin Park,
Glencoe,
Glenview,
Glen Ellyn,
Greenwood,
Hazelcrest,
Hinsdale,
Homewood,
Highland Park,
Highwood,
Kenilworth,
LaGrange,
Lake Forest,
Lansing,
Lombard,
Lyons,
Maywood,
Melrose Park,
Midlothian,
Morton Grove,
Mount Prospect,
Niles Center,
Northbrook,
North Riverside,
Oak Lawn,
Oak Park,
Orland Park,
Palos Park,
Park Ridge,
Phoenix,
Posen,
Riverdale,
River Forest,
River Grove,
Riverside,
Robbins,
Schiller Park,
Stickney,
South Holland,
Villa Park,
Western Springs,
Wheaton,
Wilmette,
Winnetka, and
Worth.

(c). That the following is a partial list of the 490 cities in the United States in which milk and milk products are sold in single-service containers:

New York, New York,	Baltimore, Maryland,
Washington, D. C.,	Trenton, New Jersey,
Cleveland, Ohio,	San Francisco, California,
Detroit, Michigan,	Jersey City, New Jersey,
Toledo, Ohio,	Boston, Massachusetts,
Philadelphia, Pennsylvania,	Wilmington, Delaware,
Los Angeles, California,	Superior, Wisconsin.

13. That plaintiff in making its application for license or permit to sell its milk or milk products in single-service containers in the City of Chicago has sent its check for $60.00 to the Board of Health to cover the costs of issuing a license or permit to plaintiff to sell its above described products in the City of Chicago.

14. (a) The U. S. Public Health Service (Public Health Bulletin No. 220, 1939 Edition) in the recommendation of a milk ordinance and code to be adopted by the states and municipalities of the United States has recommended the use of single-service containers such as are used by the plaintiff herein. Item 12r of Section 7 of said recommendations states as follows:

> "All multi-use containers or other utensils used in the handling, storage, or transportation of milk or milk products must be made of smooth nonabsorbent material and of such construction as to be easily cleaned, and must be in good repair. Joints and seams shall be soldered flush. Woven wire cloth shall not be used for straining milk. All milk pails shall be of small-mouth design approved by the health officer. The manufacture, packing, transportation, and handling of single-service containers and container caps and covers shall be conducted in a sanitary manner."

and item 10p of said Section 7 states as follows:

"All multi-use containers and equipment with which milk or milk products come in contact shall be constructed in such manner as to be easily cleaned and shall be kept in good repair. The manufacture, packing, transportation, and handling of single-service containers and container caps and covers shall be conducted in a sanitary manner.

* * * * * * *

(5) The manufacture, packing, transportation, and handling of single-service containers and container caps and covers are conducted in accordance with the following requirements. Inspections required herein may be made by the health officer or by any agency authorized by him.

(a) The buildings and rooms in which single-service containers and container caps and covers are manufactured, packed, stored, and handled shall be clean, well lighted, and ventilated, and free of dust and flies, as prescribed in items 1p, 2p, 3p, 4p, 6p, 7p, 8p, and 11p.

(b) The average bacterial plate count of the stock from which single-service containers and container caps and covers are made shall not exceed 250 colonies per gram. No substance shall be present in finished single-service containers and container caps and covers which is toxic.

(c) All operations at the fabrication plan and during transportation of the manufactured articles shall be conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13p, 14p, and 15p.

(d) All of those parts of machinery and equipment with which the article being manufactured comes in contact shall be kept clean.

(e) All single-service containers and container caps and covers shall be so treated as to be as impervious to milk and milk products as practicable.

The porous condition of paraffined containers now available and the sloughing off of particles of paraffin into the product are undesirable, and manufacturers of single-service containers are urged to make every effort to provide a nonabsorbent non-flaking surface.

(f) All single-service containers and container caps and covers shall prior to use be given bactericidal treatment equivalent to contact with paraffin for at least 20 seconds at at least 180° F., or for at least 35 seconds at at least 175° F., or for at least 1 second at at least 225° F., in approved equipment operated in an approved manner. The bactericidal treatment equipment shall be provided with approved indicating and recording thermometers, and shall be so designed as automatically to insure the required temperature and contact time."

(b) That the rooms and buildings in which the single-service containers used by plaintiff are stored, packed and handled, are clean, well lighted and ventilated, and are free of dust and flies. That the average bacterial plate count of the stock from which the single-service containers used by plaintiff are made is considerably less than 250 colonies per gram, and no toxic substance is present in the finished single service container used by plaintiff. There is no possibility of contamination of the milk or milk products of plaintiff in their production, packaging or transportation. The surface of the single service containers used by plaintiff, after being paraffined is nonabsorbent and nonflaking. No particles of paraffin on the container slough off. The containers used by plaintiff are, prior to their use, given bactericidal treatment equivalent to contact with paraffin for 35 seconds at 175 degrees Fahrenheit, the equipment therefor being provided with thermometers which automatically insure such temperature and contact time.

15. (a) At a meeting of the Board of Health on November 12, 1935, the following resolution was adopted as part of the rules and regulations of the Board of Health:

"Whereas, the present increase in the number of cases of Scarlet Fever in the City of Chicago is increasing the possibility of milk borne infections, and Whereas, it now becomes urgent and necessary for

milk and milk products used in the City of Chicago to be dispensed only in unopened original containers, as received from the distributor;

Therefore, Be It Resolved:

That all milk and milk products shall be sold, served or dispensed to the final consumer only in unopened original containers as received from the distributor; and no fractional portion or part of any original package or container shall be served or dispensed for consumption except for manufacturing purposes."

(b) At a meeting of the City Council of the City of Chicago the following resolution was introduced by Herman N. Bundesen, in which the City Council of the City of Chicago was asked to modify the milk ordinance so that single-service containers may be used in Chicago:

"Since my only concern as President of the Chicago Board of Health with regard to paper containers has been to have as positive assurance as possible that fresh fluid milk can safely be delivered in such containers, and

Because the U. S. Public Health Service, whose standard milk ordinance has been adopted by the City of Chicago has not heretofore included definite standards for the manufacture of single service containers, and

Because it was believed that we would not be acting in the best interests of safety in permitting the use of these containers until the U. S. Public Health Service had adopted suitable regulations for their manufacture and use, and

Because we have in the past followed closely the requirements of the Service, it was deemed advisable to prohibit the use of these containers in the absence of such regulations, and

Since it has now been brought to our attention that such standards have now been adopted by the Service, it is moved that

The Board of Health recommend to the City Council that Section 154-15 of the Municipal Code of Chicago be amended by adding the words "or in single service

containers" after the words "standard milk bottles" in the third sentence of such section, and

That the Board adopt such standards as have been promulgated and recommended by the U. S. Public Health Service for the manufacture and handling of single service containers and which are herewith attached."

(Said recommendation being hereto attached as "Exhibit F" and made a part hereof.)

(c) That the single service containers used by the plaintiff have been accepted and approved as sanitary, and fulfill the requirements of the rules and regulations of the Board of Health of the City of Chicago.

16. That the plant of plaintiff has been inspected by the officials of the State of Illinois and the method of pasteurizing, packaging and selling the Grade A milk and milk products of plaintiff in single-service containers has been approved by the State of Illinois; that the plant of plaintiff has been inspected and approved by the Board of Health of the City of Chicago for the sale of Grade "A" milk and cream at wholesale; that the packaging and sale of milk in single-service containers has been recommended by the Chicago Board of Health and the defendant Herman N. Bundesen, as president of the Board of Health of the City of Chicago.

Yet despite all of the foregoing, the City of Chicago has failed and persists in not issuing a license or permit to plaintiff to sell within the City of Chicago its Grade "A" pasturized milk and milk products, which are packed in single service containers.

17. The plaintiff is now ready, willing and able to sell its Grade "A" milk and milk products in said container to retail stores for consumers and to the consumers themselves in the City of Chicago; that certain milk distribu-

tors are desirous of entering into contracts with plaintiff to buy said products contained in single service containers from plaintiff; that the refusal by the defendants of permission to plaintiff to sell such products in single-service containers is arbitrary, unreasonable, unlawful and capricious and as a result thereof plaintiff has suffered and will continue to suffer a loss of many thousands of dollars.

18. (a) That the City of Chicago in failing to permit plaintiff to sell its Grade "A" pasteurized milk and milk products contained in single service containers in the City of Chicago is giving preferential treatment to those milk companies and milk producers who are selling their milk and milk products within the City of Chicago in glass containers and said preference tends to create a monopoly in the sale of milk in the City of Chicago, which thereby makes said section of the ordinance unlawful and void.

(b) That the milk and milk products contained in glass containers and which are sold in the City of Chicago are capped or have on the top thereof a piece of cardboard which is porous and in many instances not coated with paraffin, and which for all practical purposes creates a situation of danger and grave concern; that although such situation exists the sale of milk or milk products in glass containers which are thus capped is not prohibited or prevented by the City of Chicago or the Board of Health.

(c) That numerous food products for human consumption are sold in paper or cardboard containers, to-wit, ice cream, cheese, butter, oysters, pickles and many other products; that the sale of said food products in such containers is not prohibited by the City of Chicago and the Board of Health.

19. That glass milk containers before they are filled with milk must be sterilized and subjected to a chlorine rinse;

that the process of so sterilizing gives rise to many evils which are conducive to the contamination of milk being thus enclosed in glass containers. That said glass containers are used over and over again while the single-service containers sold by plaintiff are used only once by the consumer and then destroyed and disposed of.

20. That the defendants have threatened to prosecute and arrest the plaintiff if plaintiff sells or attempts to sell its Grade "A" pasturized milk and milk products so contained in the single-service containers within the City of Chicago; that plaintiff is informed and believes that the defendants will carry out their threat and such threat has caused the plaintiff to refrain from selling its Grade "A" pasteurized milk and milk products in single-service containers, within the City of Chicago thereby resulting in the loss of many thousands of dollars to plaintiff by such inability to sell its products. That plaintiff is informed and believes it will be prosecuted in numerous courts and will be otherwise harassed, annoyed and injured by defendants if plaintiff attempts to sell its Grade "A" pasteurized milk and milk products in single-service containers within the City of Chicago, although the defendants have failed and still fail to issue a permit to plaintiff to sell such products and such refusal is unreasonable, arbitrary and without justification therefore.

21. (a) That the contents of the said single-service containers are incapable of contamination from rehandling after the filling thereof without the seal on the container being tampered with or the contents removed. In the event a single-service container is exposed to freezing weather, the contents of said container are not forced out by expansion as in the case of frozen milk in a glass container, for at the top of said single service container there is room

for expansion which has been scientifically prepared. The single service containers are less likely to break than the glass containers in use in the City of Chicago, and which bears the approval of the defendants.

22. That the use of said single service containers is more economical and the distribution and sale of Grade "A" pasteurized milk and milk products to consumers in the City of Chicago can be made at a lower cost and price to said consumers than the milk and milk products furnished and contained in glass containers; that said single service containers used by plaintiff at all times contain the true and correct measure and quality of Grade "A" pasteurized milk and milk products.

23. That the conduct of the defendants in refusing to issue a permit or license to plaintiff to sell its Grade "A" pasteurized milk and milk products in single-service containers within the City of Chicago is unreasonable, illegal, and prejudicial and such conduct is without justification therefor; that such conduct deprives plaintiff of the equal protection of the laws in violation of the Fourteenth Amendment of the Constitution of the United States, and section 2 of Article 2 of the Constitution of the State of Illinois, and section 13 of Article 2 of the Constitution of the State of Illinois, in that said acts on the part of the defendants deprive plaintiff of its property without due process of law.

24. That the provisions of the Municipal Code of the City of Chicago as hereinbefore set forth and referred to, do not prohibit the use of the single-service container so used by plaintiff and known as "Pure-Pak" containers and no rule or regulation of the Board of Health of the City of Chicago prohibits the use of said single-service container within the City of Chicago; that the denial to

the plaintiff by the defendant of a permit or license to sell its Grade "A" pasturized milk and milk products in single-service containers within the City of Chicago is unreasonable, arbitrary, discriminatory and unlawful.

25. That said section 15 of Chapter 154 of the Municipal Code of Chicago which provides that all Grade "A" pasteurized milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles is unconstitutional and invalid in that it fails to explain or to define in any form or manner what constitutes a "standard milk bottle," its shape, size, or the material of which same must be made, and said provision is unconstitutional and invalid as it deprives plaintiff of due process of law and equal protection of the laws contrary to the Fourteenth Amendment of the Constitution of the United States, and section 2 of Article 2 of the Constitution of the State of Illinois, and Section 13 of Article 2 of the Constitution of the State of Illinois; and the prohibition by the defendants against plaintiff's use of the single-service container by virtue of said section of the Municipal Code of Chicago amounts to taking and damaging of property of plaintiff without just compensation in violation of section 13 of Article 2 of the Constitution of the State of Illinois.

Wherefore, plaintiff prays that summons issue out of and under the seal of this court against the above named defendants, and plaintiff prays for the following relief:

(1) That a temporary writ of injunction issue against defendants and each of them, restraining and enjoining said defendants and each of them from:

(a) In any manner or by any means from interfering with, obstructing, or hindering the plaintiff from the sale and distribution of its Grade "A" Pasteurized milk or milk

products in single service containers or containers known as "Pure-Pak" containers within the City of Chicago.

(b) From prosecuting the plaintiff in any action at law or in equity or in any criminal action purporting or alleged to arise out of the so-called violation by plaintiff of the ordinance or the municipal Code of the City of Chicago regarding the sale of Grade "A" pasteurized milk in single-service containers or "Pure-Pak" containers in the City of Chicago.

(c) From arresting, molesting, annoying, injuring, harming, or abusing plaintiff or its officers, agents, and servants in the sale and distribution of plaintiff's Grade "A" pasteurized milk and milk products in single-service containers or "Pure-Pak" containers within the City of Chicago.

(d) From confiscating, damaging, injuring or destroying any or all of plaintiff's Grade "A" pasteurized milk or milk products contained in single-service containers or "Pure-Pak" containers which at any time or times may be within the corporate confines of the City of Chicago.

(e) From continuing to refuse and failing to issue to the plaintiff a permit or license to sell, offer for sale, expose for sale, dispose of, exchange, or deliver, the Grade "A" pasteurized milk or milk products of plaintiff packaged and contained in containers known as single-service containers or "Pure-Pak" containers.

(2) That upon a final hearing, the defendants and each of them may be permanently restrained and enjoined from committing, performing or doing or from failing to do or performing any of the above mentioned acts, doings, or performances herein complained of.

(3) And for such other further relief as equity may require.

Dean Milk Company,
An Illinois Corporation.
By (Signed) Sam E. Dean,
Its Duly Authorized Agent.

STATE OF ILLINOIS, }
COUNTY OF COOK. } ss.

Sam E. Dean, being first duly sworn, on oath deposes and states that he is the President of Dean Milk Company, an Illinois corporation, and is its duly authorized agent on this behalf; that he has read the above and foregoing complaint by him subscribed; that he knows the contents thereof and that the matters and the things therein alleged are true in substance and in fact, except as to those matters and things he verily believes to be true.

Affiant further states that he believes irreparable damage and harm will ensue to plaintiff unless a temporary injunction is issued as prayed for in said complaint and unless the defendants are enjoined and restrained from doing or performing the actions complained of in said complaint.

(Signed) Sam E. Dean.

Subscribed and sworn to before me this 15th day of May, A. D. 1940.

(Signed) Gladys L. Burton,
(Seal) *Notary Public.*

Plaintiff's Exhibit "B" attached to complaint is a printed copy of Milk Pasteurization Plant Law of the State of Illinois and Minimum Requirements For Construction, Equipment, maintenance and Operation of Milk Pasteur-

ization Plants. Revised August, 1939. 65 pp. issued by Illinois Department of Public Health.

Plaintiff's Exhibit "C" attached to complaint is a sample of plaintiff's milk container blank similar to those in evidence in *City of Chicago* v. *Fieldcrest Dairies, Inc.* Oct. term, 1941, No. 706.

Plaintiff's Exhibit "D" attached to complaint is an advertising folder describing the "Pure-Pak" containers.

Plaintiff's Exhibit "E" attached to complaint is a copy of Chapter 154 of the Municipal Code of Chicago, containing *inter alia* the following sections:

> 154-2. No person shall sell, offer for sale, expose for sale, dispose of, exchange, or deliver, or with the intent so to do have in his possession, care, custody, or control, milk or milk products for human food, without having obtained a license for that purpose from the city.
>
> 154-8. It shall be unlawful for any person to bring into or receive into the city, for sale, or to sell or to offer for sale therein, or to have in storage where milk or milk products are sold or served, any milk or milk products unless such person possesses a permit from the board of health, and on his vehicle there appears in a conspicuous place the name and address of the milk distributor and the permit number and such other identification in such manner as as required by the board of health.
>
> Such permit may be revoked by the board of health upon violation by the permitee of any of the provisions of this chapter or of any of the rules and regulations of the board of health, or in any emergency when, in the judgment of the board of health, the milk or milk product handled by the permitee has or may become a public health menace, or in any case in which the permitee refuses the board of health the right of entrance to any dairy farm, milk plant, or vehicle, or any other place where milk or milk products are kept or stored, for the purposes of inspection or the collection and examination of sam-

ples; provided that the permitee shall, after abiding by such revocation, upon request have the right of a hearing before the board of health.

154-15. All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized, and all certified milk or milk products sold for consumption in the raw state shall be placed in their final delivery containers at the farm at which they are produced.

Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles. Provided, however, that nothing herein contained shall be construed to prohibit hotel, soda fountains, restaurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the board of health.

The delivery of milk and milk products to, and the collection of milk and milk products containers from, quarantined residences shall be subject to the rules and regulations of the board of health.

[Note: Sec. 154-15 is a portion of Sec. 3094 in *City of Chicago* v. *Fieldcrest Dairies, Inc.*, Oct. Term, 1941, No. 706, Rec. 108-109.]

Plaintiff's Exhibit "F" attached to the complaint is Section 10 as it will appear in the 1939 printed U. S. Public Health Service Milk Code, October 7, 1939, printed in *Fieldcrest* record, Vol. III, pp. 1699-1704.

. . . . . .

Text of Answer Filed May 21, 1940.

The defendants, City of Chicago, a municipal corporation; Edward J. Kelly, Mayor of the City of Chicago; James P. Allman, Commissioner of Police of the City of Chicago; Herman N. Bundesen, President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, members of the Board of Health of the City of Chicago, by Barnet Hodes, Corporation Counsel, and Walter V.

Schaefer, Assistant Corporation Counsel, their attorneys, answering the complaint in this case say:

1. The City of Chicago has a population of more than three and one-half million inhabitants. In the City of Chicago large quantities of milk, cream, butter milk, chocolate drink and other milk products are consumed daily. During the year 1937 an approximate daily average of 277,000 gallons of milk were sold for consumption in the City of Chicago. During the same period an approximate daily average of 27,500 gallons of cream and 20,750 gallons of milk products, such as buttermilk and chocolate milk, were sold for consumption in the city.

2. Milk, when properly produced, processed and handled, is the most nearly perfect human food. There is no article of human food more generally used than milk. Pure milk is an indispensable item in the diet of infants and children, and it is likewise an important constituent part of the diet of most invalids, and the aged and infirm. Far more milk is consumed by infants and children than is consumed by all of the other age groups in the population combined.

3. Although milk is an excelent human food, it is also an excellent medium for the growth and transmission of bacteria. The precise factors which make milk an ideal food for human beings of all ages also make milk a perfect food for bacteria.

4. Statistics collected by the United States Public Health Service show that during the decade ending with the year 1934, there was in the United States an annual average of 43 reported epidemics causing wide-spread illness and numerous deaths which have been traced directly to improper milk supplies. Most of these outbreaks have been typhoid fever epidemics, but unwholesome milk has also caused epidemics of septic sore throat, diphtheria, scarlet

fever, dysentery and poliomyelitis. Impure milk supplies have also resulted in the spread of bone and glandular tuberculosis and infantile diarrhea, as well as in the spreading of diseases of an epidemic nature.

5. Because of the grave menace to the health of the public generally which is inherent in an impure milk supply, and also because of the extreme susceptibility of infants and children, who are the principal consumers of milk, to the presence of disease organisms, impurities, adulterants and foreign substances of all types in milk, the maintenance of a pure and wholesome milk supply is one of the principal concerns of municipal government, and has long been so recognized.

6. The health of the public cannot adequately be protected aganist the hazards of an impure milk supply unless every step in the production, processing and distribution of milk is carefully safeguarded in such a manner that disease organisms present in milk are eliminated, and the possibility of the introduction of disease organisms, impurities, adulterants, or any foreign substances into milk is prevented during its production, processing and distribution.

7. Tuberculin tests for cattle are required in the State of Illinois and almost uniformly throughout the country. The plant and equipment of the farmer who produces milk for consumption in fluid form, as well as the plant and equipment of each person subsequently handling such milk during the course of its processing and distribution, are regulated with a view to preventing the possibility of the contamination or adulteration of milk.

8. The General Assembly of the State of Illinois has conferred authority upon the City of Chicago:

> "To regulate the sale of meats, poultry, fish, butter, cheese, lard, vegetables, and all other provisions,

and to provide for place and manner of selling the same and to control the location thereof."

"To provide for and regulate the inspection of meats, poultry, fish, butter, cheese, lard, vegetables, cotton, tobacco, flour, meal and other provisions."

"To do all acts, make all regulations, which may be necessary or expedient for the promotion of health or the suppression of disease." (Ill. Rev. Stat. 1937, Ch. 24, Par. 65.49, 65.52 and 65.77.)

9. In the exercise of the powers conferred upon it by the General Assembly for the protection of health of the inhabitants of the city, the City of Chicago has adopted an ordinance regulating the production, processing and distribution of milk. Said ordinance provides for the regulation of every phase of the production, processing and distribution of milk from the cow to the consumer because improper handling of milk in the distribution thereof can and will completely nullify the effect of sanitary production and processing. Included in said ordinance of the City of Chicago is the provision attacked by the plaintiff in this case which is as follows:

"Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles . . ." (Municipal Code of Chicago, section 154-15.)

10. Said ordinance of the City of Chicago first enacted in January of 1935. Prior to January of 1935 and up to the present date, the bottles in which milk in quantities of less than one gallon has been delivered in the City of Chicago have been and are made of glass. And no distribution of milk in quantities of less than one gallon in any container other glass milk bottles was permitted. The milk bottles in which milk has been delivered in the City of Chicago have definite characteristics of material and shape. They are made of glass; they are narrower at the

top than at the bottom; and they bulge with a gradual curve to their full width at about middle of the bottle. Glass milk bottles have constituted and now constitute a distinct and definite class of bottles. Paper containers have never been used for the distribution of milk in the City of Chicago. There have been no changes in the shape of milk bottles or in the material of which they are made since the first glass milk bottle was manufactured in 1884.

11. The use of paper containers for the distribution of milk is a comparatively recent developement. Only within the past five years has the paper manufacturing industry become aware of the existence of public health problems in connection with the use of paper containers for articles of food and drink. The attention of the paper industry has been devoted primarily to securing favorable consumer reaction to its products, and has been devoted in only a secondary sense, and in very recent years, to the public health problems inherent to the use of paper containers.

12. Fielderest Dairies, Inc., a Michigan corporation, authorized to do business in the State of Illinois, is a wholly owned subsidiary of the plaintiff. On February 2, 1939, Fielderest Dairies, Inc., instituted a suit in the District Court of the United States for the Northern District of Illinois, Eastern Division, against the City of Chicago and its Board of Health, which suit is pending in said Court as *Fielderest Dairies, Inc., a corporation,* plaintiff v. *City of Chicago, a municipal corporation, et al.,* defendants, No. 316. That case involves the identical paper milk container and the construction and validity of the identical provision of the ordinance of the City of Chicago which are involved in the case at bar. In that case a full trial upon the merits has been had before a Master in Chancery

duly appointed by the United States District Court. Upon that trial the testimony of very many expert witnesses was introduced with respect to the meaning and validity of the provision of the ordinance involved in this case and with respect to the sanitary and unsanitary characteristics of the Pure-Pak paper milk containers also involved in this case. 2214 pages of testimony were taken in said case and more than 90 exhibits were offered and received in behalf of the plaintiff and more than 30 exhibits were offered and received in behalf of the defendants. After proofs were closed in said case a printed brief of 191 pages was filed in behalf of the plaintiff. Thereafter an answering printed brief of 58 pages was filed in behalf of the defendants. Subsequently a printed reply brief of 58 pages was filed in behalf of the plaintiff. Thereafter, on April 27, 1940, the report of Honorable Jacob I. Grossman, Master in Chancery of the United States District Court for the Northern District of Illinois, was duly filed in said court. The report of said Master in Chancery decided the issues in favor of the defendants and found that there was evidence in the record "from the plaintiff's own witnesses" from which the City Council of the City of Chicago could reasonably have concluded that prohibition of paper containers was necessary and appropriate to protect the purity and wholesomeness of milk. The Master further found:

> "There are steps in the manufacture, conversion and filling of paper containers in which bacteria may get into the walls of the containers.
>
> Paper containers, even when paraffined, are to some extent absorbent and the milk may absorb such bacteria.
>
> Sanitary conditions differ from one paper mill to another and even in the same mill from time to time.
>
> The sanitary conditions of the mill is a significant factor as to the condition of the finished container.
>
> The sanitary condition of the paper board blank

determines the sanitary condition of the finished container.

Particles of paraffin get into the milk and constitute a foreign substance which perferably should not be in milk, especially for babies.

Odors from paraffin, whether the paraffin is fresh or not, may get into the milk.

If the paper board contains a high amount of bacteria, they may exude objectionable odors which may get into the milk.

The control and precautions by paper manufacturers themselves may not be adequate.

In the case of glass milk bottles, the City has the cleaning process at hand locally and can exercise complete control; in the case of paper containers, inspection at remote places may be necessary but impractical or too expensive.

Some paper containers have ben shown to contain high bacterial counts.

Paper containers are not transparent as glass bottles, so that it is difficult to observe the quality of the milk or whether the milk contains dirt or other foreign body.

Cream does not rise to the top in paper containers, so that purchasers may not readily know whether they are getting milk of the required fat content.

The United States Public Health Service Sanitation Board in June 1939 criticized paper containers on account of their absorbency and the sloughing off of paraffin."

Thereafter on May 7, 1940, the objections of the plaintiff to the report of the Master in Chancery were duly filed with the Clerk of said court. Thereafter on May 14, 1940, a motion was duly made in behalf of the defendants for the entry of a decree in accordance with said report. Upon the ground that there was no urgency in the disposition of the matter before the District Court, the plaintiff refused to agree to the defendant's request for a prompt hearing upon the objections to the report of the Master and the motion of the defendant for the entry of a decree.

13. Defendants allege that the Pure-Pak paper container advocated by the plaintiff in this case is neither non-absorbent nor sterile. On the contrary, defendants alleged that said container is absorbent and is not sterile; that there are steps in the manufacture, conversion and filling of paper containers in which bacteria may get into the walls of the containers; that paper containers are absorbent, so that milk placed in such containers may absorb bacteria from the paper walls of the containers; that the sanitary conditions existing in the mill which manufactues the paper, and in all other plants subsequently handling and processing such paper, determine the sanitary condition of the finished milk container; that particles of paraffin from paper containers slough off into the milk placed in those containers; that odors from paraffin get into the milk placed in paper containers; that bacteria present in the paper from which the paper containers are made exude objectionable odors which may get into the milk; that paper containers are not transparent so that it is impossible to observe the quality of the milk and to observe whether or not the milk contains dirt or other foreign object; that milk placed in paper containers undergoes a physical, chemical or electrical process which so affects the physical or chemical characteristics of the milk that the cream therein will not rise to the top of the container as it ordinarily does in containers made of material other than paper; that the paper container sold by the plaintiff contains toxic substances.

14. The defendants have no knowledge or information sufficient to form a belief with respect to the truth of the allegations contained in the following paragraphs of the complaint:

(a) The allegations of paragraph 1 of the complaint.

(b) The allegations of paragraph 3(a) of the complaint.

(c) The allegations of paragraph 3(b) of the complaint.
(d) The allegations of paragraph 4 of the complaint.
(e) The allegations of paragraph 5 of the complaint.
(f) The allegations of paragraph 6(a) of the complaint.
(g) The allegations of paragraph 6(c) of the complaint.
(h) The allegations of paragraph 7(c) of the complaint.
(i) The allegations of paragraph 7(d) of the complaint.
(j) The allegations of paragraph 8 of the complaint.
(k) The allegations of paragraph 12(a) of the complaint.
(l) The allegations of paragraph 12(b) of the complaint.
(m) The allegations of paragraph 12(c) of the complaint.
(n) The allegations of paragraph 17 of the complaint.
(o) The allegations of paragraph 21(a) of the complaint.
(p) The allegations of paragraph 21(b) of the complaint.
(q) The allegations of paragraph 22 of the complaint.

15. The defendants admit the allegations of paragraph two of the complaint and allege that the Board of Health is established pursuant to the provisions of the Municipal Code of Chicago and has the powers and is charged with the duties provided in said code.

16. The defendants have no knowledge or information sufficient to form a belief with respect to the truth of the allegations of paragraph 6(b) of the complaint, with the exception of the allegation contained in the last sentence thereof, which allegation is denied.

17. The defendants have no knowledge or information sufficient to form a belief with respect to the truth of the allegations of paragraph 7(a) of the complaint with the exception of the allegations of said paragraph to the effect that immersion of paper containers in paraffin sterilizes such containers, which allegations are denied.

18. Defendants deny the allegations of paragraph 7(b) of the complaint.

19. With respect to the allegations of paragraph nine of the complaint defendants deny that the paper containers therein referred to are sterile, and deny that said containers comply with the ordinances of the City of Chicago. With respect to the truth of the remaining allegations of said paragraph nine of the complaint the defendants have no knowledge or information sufficient to form a belief.

20. The defendants admit the allegations of paragraph ten of the complaint.

21. With respect to the allegations of paragraph eleven of the complaint, defendants say that the ordinance of the City of Chicago requiring that milk sold in quantities of less than one gallon be delivered in standard milk bottles was adopted for the protection of the health of the inhabitants of the City of Chicago. By inspection of the bactericidal methods and other processes employed in connection with the washing of standard milk bottles before they are filled with milk, it is possible to insure against contamination of the milk by its delivery container. Paper milk containers are not and cannot be subjected to effective bactericidal treatment before they are filled with milk and their sanitary condition depends upon conditions existing in distant paper mills and distant processing plants. The sanitary condition of these paper mills and processing plants varies from day to day and from hour to hour. The Board of Health and its members are without power to adopt any rules or regulations or to issue any permits whatsoever in violation of any ordinance of the City of Chicago.

22. The defendants admit the allegations of paragraph thirteen of the complaint, and allege that in making the application referred to in said paragraph Mr. S. E. Dean, the president of the plaintiff, said:

"We would like to make application to meet the Board of Health as soon as possible in order to present to them the facts regarding delivering milk to the City of Chicago in paper containers instead of bottles."

23. Defendants admit that the United States Public Health Service adopted, among other recommendations with respect to paper milk containers, the recommendations set forth in paragraph 14(a) of the complaint. The language of the ordinance of the City of Chicago involved in this case was identical with the language of the standard milk ordinance recommended by the United States Public Health Service. When the United States Public Health Service decided to amend its standard milk ordinance and code to include regulations governing the manufacture and processing of paper milk containers it realized that regulations concerning the manufacture and processing of paper containers could not logically be included in an ordinance which required that milk be delivered in standard milk bottles. It therefore recommended amendment of its ordinance by the insertion of the words "or in single-service containers" immediately after the words "standard milk bottles."

24. Defendants deny the allegations of paragraph 14(b) of the complaint.

25. Defendants admit the allegations of paragraphs 15(a) and 15(b) of the complaint, but deny the allegations of paragraph 15(c) of the complaint.

26. Defendants have no knowledge or information sufficient to form a belief with respect to the truth of the allegations of paragraph 16 of the complaint with respect to inspections of the plant of the plaintiff by the State of Illinois. The defendants admit no license or permit has been issued to the plaintiff to sell milk in Chicago in single-

service containers, and allege that the sale of milk in such containers is prohibited by a valid ordinance of the City of Chicago.

27. With respect to the allegations of paragraph 17 of the complaint as to the relations between the plaintiff and its customers or prospective customers, the defendants have no knowledge or information sufficient to form a belief. The defendants deny the remaining allegations in said paragraph.

28. The defendants deny the allegations of paragraph 18(a) and paragraph 18(b) of the complaint.

29. The defendants admit the allegations of paragraph 18(c) of the complaint but allege that because of the nature of the products there enumerated their sale in paper containers does not involve a health hazard in any way comparable to that involved in the sale of milk in paper containers.

30. With respect to the allegations of paragraph 19 of the complaint, defendants deny that any conditions exist in connection with the process of washing and sterilizing standard milk bottles in the City of Chicago which are inimical to the public health.

31. With respect to the allegations in paragraph 20 of the complaint, defendants admit that the ordinances of the City of Chicago, pertaining to the production, processing and distribution of milk, will be enforced and that the violation of said ordinances will be prosecuted. Defendants deny the remaining allegations of said paragraph.

32. Defendants deny the allegations of paragraph 23 of the complaint.

33. Defendants deny the allegations of paragraph 24 of the complaint.

34. Defendants deny the allegations of paragraph 25 of the complaint.

35. Defendants deny that the plaintiff will suffer any immediate, irreparable injury by reason of the matters and things alleged in the complaint and in the alternative allege that if the plaintiff is entitled to any relief whatsoever because of the matters and things set forth in the complaint its remedy therefore at law is plain, adequate and complete.

City of Chicago, a Municipal Corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, as Members of the Board of Health of the City of Chicago,

Defendants,

By BARNET HODES,
Corporation Counsel,
WALTER V. SCHAEFER,
Assistant Corporation Counsel,
Their Attorneys.

STATE OF ILLINOIS, }
COUNTY OF COOK. } ss.

Francis A. Dulak, being first duly sworn, on oath says: I am the duly qualified and acting secretary of the Board of Health of the City of Chicago, and one of the defendants in this case. I make this affidavit on behalf of myself and of the other defendants herein. I have read the foregoing answer and the matters and things therein stated are true.

I have no knowledge or information, and I am advised that the other defendants have no knowledge or information, sufficient to form a belief with respect to the truth of the allegations contained in paragraphs 1, 3(a), 3(b), 4, 5, 6(a), 6(b), 6(c), 7(a), 7(c), 7(d), 8, 9, 12(a), 12(b), 12(c), 17, 21(a), 21(b), and 22 of the complaint.

FRANCIS A. DULAK.

Subscribed and sworn to before me this 20th day of May, 1940.

[Seal] MARGARET M. SMITH,
Notary Public.

Text of Report of the Trial Proceedings.
Filed May 21, 1940.

AFFIDAVIT OF WALTER V. SCHAEFER.

STATE OF ILLINOIS, }
COUNTY OF COOK. } ss.

Walter V. Schaefer, being first duly sworn, on oath says:

I am an Assistant Corporation Counsel of the City of Chicago. As such I am charged with the conduct of the case of *Fieldcrest Dairies Inc.* v. *City of Chicago et al.*, No. 316 in the United States District Court for the Northern District of Illinois, Eastern Division, and with the conduct of the case at bar. The plaintiff in the case of *Fieldcrest Dairies, Inc.* v. *City of Chicago et al.*, is a wholly owned subsidiary of the Dean Milk Company, the plaintiff in the case at bar. Said case pending in the United States District Court involves the construction and the validity of the identical ordinance of the City of Chicago the construction and validity of which are involved in the case at bar. The issues in the two cases are identical. The paper milk

container which is involved in the case pending in the United States District Court is precisely the same paper container which is involved in the case at bar, even to the identical printing which appears upon both of said containers.

The case pending in the United States District Court was instituted in that court on February 2, 1939. Thereafter said case was duly referred by the District Court to a Master in Chancery and extensive hearings upon the merits were had before the Master. The testimony of numerous expert witnesses in behalf of the plaintiff and of one expert witness in behalf of the defendants was taken. The record in said case consists of 2214 pages of testimony and more than 90 exhibits which were offered and received in behalf of plaintiff and more than 30 exhibits which were offered and received in behalf of the defendants.

On December 19, 1939 the plaintiff's brief was filed with the Master in Chancery of the District Court, consisting of 191 printed pages. On January 27, 1940 the brief in behalf of the defendants was filed with the Master, consisting of 58 printed pages. On February 15, 1940 the reply brief of the plaintiff was filed with the Master, consisting of 58 printed pages. On April 27, 1940 the report of the Master in Chancery, recommending a decree in favor of the defendants and against the plaintiff, was filed in the office of the clerk of the United States District Court. A copy of said report of the Master in Chancery is attached hereto and marked "Exhibit A." On May 7, 1940 the objections of the plaintiff to the report of the Master were filed with the clerk of the United States District Court.

On May 14, 1940 I appeared in behalf of the defendants before the Honorable Charles E. Woodward, one of the

judges of the United States District Court, and requested the entry of a decree in accordance with the report of the Master in Chancery. At that time I urged that the court fix an early date for the hearing upon the objections of the plaintiff to the report of the Master and upon the motion of the defendants for the entry of a decree in accordance with the said report. At that time the attorney for *Fieldcrest Dairies, Inc.*, refused to agree to an early hearing upon the objections to the report of the Master and upon the motion of the defendants for the entry of a decree in accordance therewith and stated to the court that there was no urgency in connection with the disposition of the case.

Thereafter the complaint in the case at bar was filed.

WALTER V. SCHEAFER.

Subscribed and sworn to before me this 21st day of May, 1940.

Margaret M. Smith,
Notary Public.

(Seal)

Exhibit "A", attached to affidavit is a copy of Master's Report filed April 25, 1940 in *Fieldcrest Dairies, Inc.* v. *City of Chicago, et al.*, U. S. Dist. Ct. No. 316, incorporated in record in *City of Chicago, et al.* v. *Fieldcrest Dairies*, Supreme Court of the United States, Oct. Term 1941, No. 706; Rec. 1710-1736.

AFFIDAVIT OF LLOYD ARNOLD.

STATE OF ILLINOIS, }
COUNTY OF COOK. } ss.

Lloyd Arnold, being first duly sworn on oath, says:

I am a member of the Board of Health of the City of Chicago and one of the defendants in this cause. I am a professor of the University of Illinois College of Medicine, in charge of the Department of Bacteriology and Public Health. I have held that position since 1927. I received my medical education at Tulane University Medical School in New Orleans, the University of London and Oxford University in England, the Institute of Tropical Medicine in Hamburg, Germany, and the Universities of Goettingen, Munich and Tuebingen, also in Germany. I also attended the medical school at Vanderbilt University in Tennessee. Prior to the time when I became associated with the University of Illinois I was Professor of Bacteriology, Pathology and Public Health at Loyola University Medical School in the City of Chicago.

I am familiar with the manufacture of paper for use in paper milk containers and with the subsequent steps in the processing and handling of that paper in the manufacture of paper milk containers. I am familiar also with the sanitary and bacteriological conditions existing in paper mills and in connection with the handling and processing of paper into paper milk containers.

Paraffined paper milk containers as presently available are uniformly absorbent. The effect of the absorbency of these containers is that any bacteria which are present in the walls of the paper container can be and are transmitted to the milk placed in the containers. Bacteria are present in the walls of paper milk containers. The sanitary condi-

tion of paper milk containers depends to a very considerable extent upon the degree of sanitation achieved by the paper mill in which the paper is manufactured.

The sanitary condition of the paper containers also depends upon the purity of the water supply used in the paper mill in which the paper is manufactured. The ordinary source of the water supply of a paper mill is river water which in almost all instances contains sewage. Sewage bacteria have been found in the water supply of the paper mill in which the paper used in making the containerse involved in this case are produced.

The paper containers involved in this caes contain toxic substances, namely, leads, which are used in the ink which is used in printing said containers. This ink, by a process known to the printing trade as "offsetting," is transmitted from the outside of one paper container blank to the inside of the one next adjacent.

The immersion of paper milk containers in paraffin does not have a bactericidal effect and no effective bactericidal treatment is given to paper milk containers prior to the time when they are filled with milk.

In my opinion the requirement of the ordinance of the City of Chicago that milk sold in quantities of less than one gallon be delivered in standard milk bottles serves to protect the health of the inhabitants of the City of Chicago, and the use of paper milk containers of the type now available and of the type advocated by the plaintiff would involve hazards to public health greater in degree and less possible of ascertainment and correction than are involved in the use of standard milk bottles.

From the point of view of the protection of the public health, a container in which milk is delivered should meet the following requirements:

(a) The surface of the container in contact with milk shall be smooth and unbroken. The surface of the container in contact with milk shall be impermeable and non-porous.

(b) The surface of the container in contact with milk shall be sterile or constructed of such materials that it can be disinfected in the dairy before use.

(c) The contents of the container shall not be contaminated by microorganisms, chemicals or other substances contained in the material forming the wall.

The paper containers presently available, including the container advocated by the plaintiff, do not meet these requirements.

(Signed) LLOYD ARNOLD.

Subscribed and sworn to before me this 21st day of May, 1940.

(Seal) Margaret M. Smith,
Notary Public.

Forasmuch as the matters and things above set forth do not fully appear of record, the defendants tender this, the report of the proceedings at the trial in the above entitled cause, consisting of the affidavits submitted by the defendants on the hearing before the court upon the motion of the plaintiff for the issuance of a temporary injunction, and pray that the same may be signed, sealed and certified as correct by the Honorable William V. Brothers, Trial Judge; and the undersigned being said Trial Judge hereby certifies that upon the hearing of said motion there were submitted to the court the sworn complaint of the plaintiff, the sworn answer of the defendants, and the foregoing affi-

davits; that no other evidence was offered upon the hearing of said motion.

WM. V. BROTHERS,
Judge of the Circuit Court of Cook County.

Dated May 21, 1940.

Approved:

DENNIS J. O'TOOLE,
Attorney for Plaintiff-Appellee.
BARNET HODES,
Corporation Counsel.
WALTER V. SCHAEFER,
Assistant Corporation Counsel,
Attorneys for Defendants-Appellants.

Text of Temporary Injunction Entered May 21, 1940.

This cause coming on to be heard upon the motion of the plaintiff for the issuance of a temporary injunction against the defendants, City of Chicago, a Municipal Corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police; Board of Health of the City of Chicago; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago, due notice of said motion having been served upon said defendants, the court having considered the verified complaint heretofore filed herein by the plaintiff, having heard the arguments of counsel and being fully advised in the premises, and

The Court finds that the single service containers or "Pure-Pak" containers used by plaintiff are within the

contemplation of the term "standard milk bottles" as used in the Municipal Code of the City of Chicago.

It Is Ordered, Adjudged and Decreed that a writ of injunction issue herein forthwith directed to and restraining and enjoining the defendants, City of Chicago, a Municipal corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police; Board of Health of the City of Chicago; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago, and each of them from:

(a) In any manner or by any means from interfering with, obstructing, or hindering the plaintiff from the sale and distribution of its Grade "A" Pasteurized milk or milk products in single service containers or containers known as "Pure-Pak" containers within the City of Chicago, on the ground that they are not standard milk bottles.

(b) From prosecuting the plaintiff in any action at law or in equity or in any criminal action purporting or alleged to arise out of the so-called violation by plaintiff of the ordinances of the Municipal Code of the City of Chicago regarding the sale of Grade "A" pasteurized milk in single service containers or "Pure-Pak" containers in the City of Chicago.

(c) From arresting, molesting, annoying, injuring, harming, or abusing plaintiff or its officers, agents, and servants in the sale and distribution of plaintiff's Grade "A" pasteurized milk and milk products in single service containers or "Pure-Pak" containers within the City of Chicago.

(d) From confiscating, damaging, injuring or destroying any or all of plaintiff's Grade "A" pasteurized milk

or milk products contained in single service containers or "Pure-Pak" containers which at any time or times may be within the corporate confines of the City of Chicago.

(e) From continuing to refuse and failing to issue to the plaintiff a permit to pasteurize Grade "A" milk at its plant in Chemung, Illinois, and from continuing to refuse and failing to issue to the plaintiff a license to sell, offer for sale, expose for sale, dispose of, exchange, or deliver, the Grade "A" pasteurized milk or milk products of plaintiff packaged and contained in containers known as single service containers or "Pure-Pak" containers.

It Is Further Ordered that said writ of injunction issue upon the plaintiff's filing herein a bond in the sum of $500.00 with surety thereon, to be approved by the court within 5 days from date hereof.

It Is Further Ordered, Adjudged and Decreed that said injunction remain in force and effect until dissolved or altered by order or decree of this court.

It Is Further Ordered, Adjudged and Decreed that any notice of appeal filed by the defendants shall operate as a supersedeas without bond.

Enter:

WM. V. BROTHERS,
Judge.

Dated: May 21, 1940.

Text of Notice of Appeal Filed May 21, 1940.

City of Chicago, a Municipal Corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police; Board of Health of the City of Chicago; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak,

Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago, defendants-appellants, hereby appeal to the Appellate Court of Illinois, First District, from the interlocutory order of the Circuit Court of Cook County entered in this cause on the 21st day of May, 1940, wherein the court, after considering the sworn complaint of the plaintiff, the sworn answer of the defendants, and certain affidavits submitted by the defendants, held for the plaintiff-appellee, Dean Milk Company, an Illinois Corporation, and ordered, adjudged and decreed:

That a writ of injunction issue forthwith restraining and enjoining the defendants and each of them from:

(a) In any manner or by any means from interfering with, obstructing, or hindering the plaintiff from the sale and distribution of its Grade "A" Pasteurized milk or milk products in single service containers or containers known as "Pure Pak" containers within the City of Chicago, on the ground that they are not standard milk bottles.

(b) From prosecuting the plaintiff in any action at law or in equity or in any criminal action purporting or alleged to arise out of the so-called violation by plaintiff of the ordinances of the Municipal Code of the City of Chicago regarding the sale of Grade "A" pasteurized milk in single-service containers or "Pure-Pak" containers in the City of Chicago.

(c) From arresting, molesting, annoying, injuring, harming, or abusing plaintiff or its officers, agents, and servants in the sale and distribution of plaintiff's Grade "A" pasteurized milk and milk products in single-service containers or "Pure-Pak" containers within the City of Chicago.

(d) From confiscating, damaging, injuring or destroying any or all of plaintiff's Grade "A" pasteurized milk

or milk products contained in single-service containers or "Pure-Pak" containers which at any time or times may be within the corporate confines of the City of Chicago.

(e) From continuing to refuse and failing to issue to the plaintiff a permit to pasteurize Grade "A" milk at its plant in Chemung, Illinois, and from continuing to refuse and failing to issue to the plaintiff a license to sell, offer for sale, expose for sale, dispose of, exchange, or deliver, the Grade "A" pasteurized milk or milk products of plaintiff packaged and contained in containers known as single service containers or "Pure-Pak" containers.

The defendants-appellants pray that said order may be reversed.

City of Chicago, a Municipal Corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police of the City of Chicago; Board of Health of the City of Chicago; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago.

By BARNET HODES,
Corporation Counsel,
WALTER V. SCHAEFER,
Assistant Corporation Counsel,
Attorneys for Defendants-Appellants.

B. APPELLATE COURT PROCEEDINGS—MAY 22 TO JUNE 4, 1940.

STATEMENT OF COUNSEL SUMMARIZING APPELLATE COURT PROCEEDINGS.

Section 78 of the Illinois Civil Practice Act (Illinois Revised Statutes 1941, Chapter 110, "Practice," Para. 202), provides for an appeal from an interlocutory order granting an injunction. The statute cited provides that such interlocutory order and the proceedings in the court below shall not be stayed during the pendency of such appeal except upon order of the Appellate Court or of a judge thereof in vacation.

The appeal of the defendants from the interlocutory injunction of the Circuit Court of Cook County was docketed in the Appellate Court of Illinois for the First District under the title of "Dean Milk Company, an Illinois Corporation, Appellee, *vs.* City of Chicago, a municipal corporation, *et al.*, Appellants, General Number 41348," on May 22, 1940.

On the same day, upon due notice, the defendants, including the City of Chicago, made a motion in the Appellate Court to enter an order staying the force and effect of the interlocutory injunction of the Circuit Court of Cook County entered May 21, 1940. In support of said motion the defendants filed suggestions under oath stating, among other things, that the trial court should not have entered the injunction because of the pendency of the proceedings in the United States District Court referred to in paragraph 12 of the defendants' answer and referred to in the affidavit in opposition to the motion for a temporary injunction.

On the same day, May 22, 1940, the Appellate Court entered an order that having examined the record filed herein and the arguments of counsel, the injunctional order of May 21, 1940, of the Circuit Court of Cook County should be stayed without bond pending the final disposition of the appeal in the Appellate Court.

On May 29, 1940, upon due notice, the plaintiff, Dean Milk Company, a corporation, of which Fieldcrest Dairies, Inc., is a wholly-owned subsidiary, confessed in writing "that there was manifest error in the rendition of the interlocutory order of the Circuit Court of Cook County entered on May 21, 1940, from which the appeal is prosecuted in this cause" and made a motion to reverse the interlocutory order.

On the same day, May 29, 1940, the City of Chicago and other defendants moved the Appellate Court:

> "(1) To include in the order of this Honorable Court reversing said order of May 21, 1940, directions to the trial court to dismiss the cause in that court on the ground that the plaintiff-appellee has an adequate remedy at law;
>
> "(2) In the event of the refusal by this Honorable Court to direct the dismissal of the above entitled cause as aforesaid, then these defendants-appellants move this Honorable Court to include in its order, reversing said order of May 21, 1940, directions to the trial court to stay proceedings in the above entitled cause until the determination of the suit pending in the United States District Court for the Northern District of Illinois, Eastern Division."

On May 31, 1940, the plaintiff, Dean Milk Company, filed counter-suggestions in opposition to said motion of the appellants (defendants).

On June 3, 1940, the defendants filed a written reply to the plaintiff's suggestions in which among other things the defendants stated:

"Our motion that this Honorable Court direct the trial court to stay proceedings in the above entitled cause until the determination of the suit pending in the United States District Court, does not ask this court to pass upon the merits of this case. Such an order would not affect in any manner or to any extent the right of the plaintiff-appellee to obtain at the proper time all remedy sought by its suit if it shall show itself to be entitled thereto.

"This was an action in equity in the trial court and it is an action in equity on this appeal. The record in this case discloses a situation (discussed under Point IV of Appellants' brief, pp. 31-34) which should have persuaded the trial court, sitting in chancery, and should now persuade this Honorable Court, on this chancery appeal, to stay proceedings in this cause until the litigation in the Federal court can be determined. The City of Chicago incurred considerable expense in the Federal court litigation instituted and carried on by the wholly owned subsidiary of the plaintiff in the case at bar. The case at bar involves the same issues and the same paper carton. The paper carton attached as an exhibit to the plaintiff's pleading in this case is a duplicate of the paper carton attached as an exhibit to the pleading of the plaintiff in the Federal court case. Every equitable consideration arising from the facts in this case is favorable to the contention of the city that it should not be forced to bear the repetition of the expense of a protracted trial because of any alleged urgency connected with the case, in view of the action of the wholly owned subsidiary of the plaintiff in preventing an early determination of the Federal court litigation by insisting that there was no urgency.

"The necessity for the exercise by this court of the power granted to it to 'direct such proceedings to be had in the court below as the justice of the case may require,' and in the exercise of that power to direct the trial court to stay proceedings herein until the litigation in the Federal court can be determined, is indicated by two statements made in the suggestions of the plaintiff-appellee."

On June 4, 1940, the Appellate Court entered two orders which were as follows:

"On this day came again the said parties, and the Appellee having admitted and confessed that in the Record and proceedings aforesaid, and in the rendition of the Interlocutory Order of May 21, A. D. 1940 aforesaid there is Manifest Error: Therefore, it is considered by the Court that for that Error the Interlocutory Order of May 21, A. D. 1940, of the Circuit Court of Cook County in this behalf rendered, be reversed anulled, set aside and wholly for nothing esteemed in accordance with the confession of error filed herein.

"And it is further considered by the Court that the said Appellants recover of and from the said Appellee their costs by them in this behalf expended, to be taxed, and that they have execution therefor."

"The Court having considered Appellants' motion to include in the order of reversal an order directing the trial Court to dismiss the cause or to include in its order of reversal an order directing the trial court to stay proceedings in the above entitled cause until the determination of the suit pending in the United States District Court of the Northern District of Illinois, Eastern Division, as per suggestions filed herein, and having also considered the counter-suggestions of the Appellee to said motion, as well as Appellants' reply to said counter-suggestions filed herein, and being now fully advised in the premises doth order that said motion be and the same is hereby denied."

C. CIRCUIT COURT PROCEEDINGS—JUNE 18 TO DECEMBER 3, 1940.

STATEMENT OF COUNSEL SUMMARIZING FURTHER TRIAL COURT PROCEEDINGS.

On June 18, 1940, the mandate of the Appellate Court reciting the reversal entered in that court June 4, 1940, was filed in the Circuit Court of Cook County and further proceedings were had in that court as follows:

Upon due notice, on the same day, June 18, 1940, the plaintiff filed an Amended and Supplemental Complaint consisting of two parts. The first part made substantially the same allegations as the original Complaint except that it alleged that on June 13, 1940, the City of Chicago had refused to issue a permit to the plaintiff, Dean Milk Company, to pasteurize and to sell within the City of Chicago its Grade A milk packed in single-service containers, "giving as an alleged reason for its said refusal that 'no facilities existed for the washing and filling of standard milk bottles' in plaintiff's plant at Chemung, Illinois, and because plaintiff is 'not prepared to distribute milk or milk products in standard milk bottles' from its plant in Melrose Park, Illinois." True copies of said refusals dated June 13, 1940, were attached to the Amended and Supplemental Complaint as Exhibits E and F. Exhibit E contained the language quoted in the allegation just mentioned prefaced by this statement:

> "An inspection of the plant and equipment was made on June 4, and it was found that this is the same plant for which a milk plant permit application was made in the name of Fieldcrest Dairies, Inc., a division of the Dean Milk Co., subsequent to which inspections were made a short time ago, when it was found that no facilities existed," etc.

Part two of said Amended and Supplemental Complaint was a separate action at law by the same plaintiff praying that a writ of mandamus be issued to compel the defendants to issue to the plaintiff a license to pasteurize and to sell milk in containers "known as single-service or 'Pure-Pak' containers." Part two of the Amended and Supplemental Complaint adopted the allegations of part one by reference and alleged generally that the plaintiff had complied in all particulars with all requirements entitling it to the issuance of a permit for the sale of milk in single-service or Pure-Pak containers within the City of Chicago.

On June 25, 1940, the defendants, upon due notice to the plaintiff, filed a motion in writing "that this Honorable Court stay proceedings in this case pending the disposition of the case entitled '*Fieldcrest Dairies, Inc., a corporation,* Plaintiff v. *City of Chicago, a municipal corporation, et al.,* Defendants,' which is now pending as No. 316 in the District Court of the United States for the Northern District of Illinois, Eastern Division. And in support of said motion the defendants present herewith their sworn petition."

The said petition averred under oath the following, omitting the caption, signatures and verification:

Text of Defendants' Petition to Stay Proceedings Filed June 25, 1940.

The defendants, by Barnet Hodes, Corporation Counsel of the City of Chicago, their attorney, respectfully represent to this Honorable Court:

1. Fieldcrest Dairies, Inc., a Michigan corporation, authorized to do business in the State of Illinois, is a wholly owned subsidiary of the plaintiff in the case at bar, the

Dean Milk Company. On February 2, 1939 Fieldcrest Dairies, Inc., instituted a suit in the District Court of the United States for the Northern District of Illinois, Eastern Division, against the City of Chicago and its Board of Health, which suit is pending in said Court as *Fieldcrest Dairies, Inc., a corporation*, plaintiff v. *City of Chicago, a municipal corporation, et al.*, defendants, No. 316. That case involves the identical paper milk container and the construction and validity of the identical provision of the ordinance of the City of Chicago which are involved in the case at bar.

2. In that case a full trial upon the merits has been had before a Master in Chancery duly appointed by the United States District Court. Upon that trial the testimony of very many expert witnesses was introduced with respect to the meaning and validity of the identical ordinance which is involved in this case and with respect to the sanitary and unsanitary characteristics of the Pure-Pak paper milk containers which are also involved in this case.

3. Two thousand two hundred and fourteen pages of testimony were taken in said case and more than 90 exhibits were offered and received in behalf of the plaintiff and more than 30 exhibits were offered and received in behalf of the defendants. After proofs were closed in said case a printed brief of 191 pages was filed in behalf of the plaintiff. Thereafter an answering printed brief of 58 pages was filed in behalf of the defendants. Subsequently a printed reply brief of 58 pages was filed in behalf of the plaintiff.

4. Thereafter, on April 27, 1940, the report of Honorable Jacob I. Grossman, Master in Chancery of the United States District Court for the Northern District of Illinois, was duly filed in said court. The report of said

Master in Chancery decided the issues (which are identical with the issues in the case at bar) in favor of the defendants. A copy of said report of the Master in Chancery is attached hereto, marked Exhibit 1. [*Note:* This is the report set forth in the record, Vol. III, pp. 1710-1736, *City of Chicago* v. *Fieldcrest Dairies, Inc.*, Oct. Term, 1941, No. 706, and is here omitted in printing.]

5. Thereafter, on May 7, 1940, the objections of plaintiff to the report of the Master in Chancery were duly filed with the Clerk of said court. Thereafter, on May 14, 1940, a motion was duly made in behalf of the defendants for the entry of a decree in accordance with said report. Upon the ground that there was no urgency in the disposition of the matter before the District Court, the plaintiff refused to agree to the defendants' request for a prompt hearing upon the objections to the report of the Master and the motion of the defendants for the entry of a decree. On the next day, May 15, 1940, the case at bar was instituted in this court.

6. The plaintiff in said case pending in the United States District Court is the wholly owned subsidiary of the plaintiff in the case at bar and is under the complete control and domination of the plaintiff in the case at bar. The disposition of the case pending in the United States District Court is being deliberately delayed by the plaintiff and its subsidiary in order to secure a re-trial of identical issues in the case at bar. All of the evidence necessary for the complete determination of the issues presented in the case at bar has been offered and received in the case pending in the United States District Court and a re-trial of those issues in the case at bar will result only in the imposition of additional expense upon the taxpayers of the City of Chicago.

Wherefore defendants pray that an order be entered by this Honorable Court staying proceedings in this case until the disposition of the case entitled *Fieldcrest Dairies, Inc.* v. *City of Chicago, et al.*, No. 316 in the District Court of the United States for the Northern District of Illinois, Eastern Division.

On June 25, 1940, an order was entered continuing the motion of the defendants to stay the proceedings to the first hearing of the contested motion calendar of the trial judge, in September, 1940.

On July 2, 1940, the defendants filed an answer to the amended and supplemental complaint, which, with respect to part one was identical with the original answer to the original complaint set forth above. The answer to part two, being the action at law in mandamus, adopted by reference the defendants' answer to paragraphs 1 to 25 of part one of the answer and denied generally the allegations that the plaintiff had complied with the requirements necessary for a license to sell milk in the City of Chicago in single-service or Pure-Pak containers and denied plaintiff's alleged right to a writ of mandamus. Said answer to the amended and supplemental complaint was under oath.

On July 3, 1940, on motion of the plaintiff, the cause was set for hearing on September 9, 1940.

On September 9, 1940, by leave of court, plaintiff filed a supplement to the Amended and Supplemental Complaint.

Text of Supplement to Amended and Supplemental Complaint.

Now comes the Plaintiff, Dean Milk Company, a corporation duly organized and existing under and by virtue of the laws of the State of Illinois, by Charles O. Rundall and Horace A. Young, its attorneys, and by leave of court first had and obtained files this its Supplement to Amended and Supplemental Complaint against the Defendants City of Chicago, a Municipal corporation; Edward J. Kelly, as Mayor of the City of Chicago; James P. Allman, as Commissioner of Police; Board of Health of the City of Chicago; Herman N. Bundesen, as President of the Board of Health of the City of Chicago; and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold, as members of the Board of Health of the City of Chicago, and alleges as follows:

SEPARATE ACTION IN CHANCERY.

(1) That since the filing of its Amended and Supplemental Complaint herein on June 18, 1940, certain additional events have transpired which are material and pertinent to the issues involved in this cause, and in this its Supplement to Amended and Supplemental Complaintiff Plaintiff sets forth such additional events.

(2) That at a meeting of the Board of Health of the City of Chicago held at the offices of the Board on August 15, 1940, at which meeting the Defendants Herman N. Bundesen, Francis A. Dulak, Louis E. Schmidt and Lloyd Arnold were present, said Herman N. Bundesen presented to the Board a written memorandum of certain proceedings before the Board, consisting of ten (10) or more typewritten pages. In said written memorandum, which Plain-

tiff will require said Defendants to produce upon the hearing of this cause, said Herman N. Bundesen stated in substances that the Board prepared a letter dated June 3, 1940, to be sent to Plaintiff in which letter the Board stated that before action would be taken by the Board upon the request of Plaintiff for the issuance of certain permits, the Board wished to be informed that it was the plan of Plaintiff to distribute milk and milk products in the City of Chicago in standard milk bottles and not in single-service containers, but, that upon the advice of Fred V. Maguire, Assistant Corporation Counsel of the City of Chicago, said letter was never sent. Said Defendant further stated that acting upon the advice of said Fred V. Maguire and with the assistance of said Fred V. Maguire, the Board prepared and sent to Plaintiff the letter dated June 13, 1940, a copy of which is attached to the Amended and Supplemental Complaint heretofore filed herein as "Exhibit E" thereto, in which letter the reason for the refusal of the permits was given as the lack of facilities for the washing and filling of standard milk bottles. Said Defendant further stated that the Board had been informed that subsequent to June 13, 1940, Plaintiff had made alterations in its plant to provide equipment for washing and filling standard one-half gallon glass containers for milk and milk products, to be distributed to prospective customers in Chicago until the use of paper containers shall be approved and that on August 4, 1940, Inspector A. W. Kitley inspected said plant and found that the plant, equipment and methods were in full compliance with the ordinances and the rules and regulations of the Board of Health. After a discussion of the memorandum presented by said Herman N. Bundesen and the matters therein contained, the Board unanimously passed the following resolutions:

"BE IT RESOLVED, that milk plant and milk distributor's permits (Numbered 37) be issued to the Dean Milk Company."

"BE IT RESOLVED, that the application of the Dean Milk Company for a milk distributor's license be approved and the City Collector so advised."

(3) That pursuant to said resolutions there were issued to Plaintiff on August 16, 1940, a milk plant permit for its plant at Chemung, Illinois, a photostatic copy of which permit is hereto attached, marked "Exhibit A" and hereby made a part hereof, a milk distributor's permit at 2511 West Lake Street, Melrose Park, Illinois, a photostatic copy of which is hereto attached, marked "Exhibit B" and hereby made a part hereof, and permits for five vehicles, Nos. 27 to 31, inclusive.

(4) That on August 22, 1940, there was also issued to Plaintiff a food distributor's permit for a store located at 3819 Southport Avenue, Chicago, Illinois, and pursuant to such permit Plaintiff opened said store for business on August 23, 1940, and there offered for sale various dairy and poultry products. On Thursday, August 29, 1940, Plaintiff announced that on Friday, August 30, 1940, it would sell at its said store located at 3819 Southport Avenue, Chicago, Illinois, its Grade A pasteurized milk and milk products packaged in single-service containers commonly known as paper bottles, and that such announcement was made by means of hand bills distributed in the vicinity of said store and by a statement sent to the public press and to the Board of Health.

(5) That pursuant to said announcement Plaintiff did on Friday, August 30, 1940, proceed to offer for sale and sell its Grade A pasteurized milk and milk products packaged in single-service containers commonly known as paper bottles at its said store and continued such sales

until the late afternoon of that day. Plaintiff learned at or about 3:00 o'clock in the afternoon of that day that a special meeting of the Board of Health had been called to consider the revocation of the permits theretofore issued to Plaintiff as above described. Present at such meeting of the Board of Health were the Defendants Herman N. Bundesen, Harry J. Reynolds and Louis E. Schmidt, and also one Fred V. Maguire, Assistant Corporation Counsel. Dairy Inspector Kruger reported to the Board that Plaintiff had on that day sold milk in single-service containers, commonly known as paper bottles, in the City of Chicago in alleged violation of the ordinances of the City of Chicago and that therefore he recommended the revocation of the permits theretofore issued to Plaintiff; that thereupon the Defendant Herman N. Bundesen inquired of said Fred V. Maguire, Assistant Corporation Counsel, as to whether or not the Board of Health had any alternative in the matter of revoking the permits and that said Fred V. Maguire then and there advised said Herman N. Bundesen and the other members of the Board present that the Board had no alternative of any kind in the premises and that the Board was obligated by law to revoke such permits; that thereupon, and over the vigorous protests and objections of Plaintiff's representatives, a resolution was unanimously passed by the three members of the Board present purporting to revoke such permits. Plaintiff alleges that it had fully complied with all lawful requirements entitling it to the above described permits, and after the issuance of said permits Plaintiff did no act which warranted any revocation thereof, and the action of the Defendant Board of Health and said individual Defendants as members of the Board of Health was wrongful and without warrant in law.

(6) That since the purported revocation of said permits, Plaintiff has not sold any of its Grade A pasteurized milk and milk products in the City of Chicago.

(7) That since the purported revocation of said permits, the Defendants have failed and refused to rescind the purported revocation and have failed and refused to issue new permits to Plaintiff.

WHEREFORE, Plaintiff prays for the same relief as prayed for in its Amended and Supplemental Complaint filed herein and that Defendants be ordered and directed to rescind their action in connection with such purported revocation and to restore or re-issue to Plaintiff said permits and for such other, further and different relief as the foregoing allegations may justify and to the Court may seem meet.

SEPARATE ACTION AT LAW.

Now comes Dean Milk Company, a corporation, duly organized and existing under and by virtue of the laws of the State of Illinois, by Chas. O. Rundall and Horace A. Young, its attorneys, and complains of all the Defendants above named and alleges as follows:

(1) Pursuant to Rule 11 of the Rules of Practice of the Supreme Court of Illinois, Plaintiff hereby adopts by this reference thereto all of the allegations made in paragraphs (1) to (7) of the above and foregoing Supplement to Amended Supplemental Complaint and by this reference thereto hereby incorporates all of said allegations into this separate action at law.

(2) Plaintiff has complied in all particulars with all requirements entitling it to the issuance or re-issuance of a permit or license to pasteurize and to sell, offer for sale, expose for sale, dispose of, exchange or deliver the

Grade A Pasteurized milk or milk products of Plaintiff packaged or contained in containers known as single-service containers or "Pure-Pak" containers, commonly known as paper bottles, within the City of Chicago.

WHEREFORE, Plaintiff prays for the same relief prayed for in its Amended and Supplemental Complaint filed herein or in the alternative that a writ of mandamus be issued directing and compelling said Defendants Board of Health of the City of Chicago, Herman N. Bundesen as President of the Board of Health of the City of Chicago, and Francis A. Dulak, Harry J. Reynolds, Louis E. Schmidt and Lloyd Arnold as members of the Board of Health of the City of Chicago, to restore or re-issue to the Plaintiff said permits or licenses which are purported to have been so revoked and for such other and further relief as to the Court may seem meet in the premises.

DEAN MILK COMPANY, an Illinois Corporation,
By (Signed) SAM E. DEAN,
Its President and Duly Authorized Agent.

(Signed) CHAS. O. RUNDALL,
(Signed) HORACE A. YOUNG,
Attorneys for Plaintiff.

Attached to said Supplement to Amended and Supplemental Complaint as exhibits were two permits dated August 15, 1940, bearing Permit No. 37, issued by the Board of Health, City of Chicago, the first permit reciting in substance the following:

> "A Permit is hereby granted to Dean Milk Co., Chemung, Illinois subject to ordinances of the City of Chicago, and the rules and regulations of the Board of Health of the City of Chicago, to operate a Milk Plant.

"This permit may be revoked when the holder thereof fails to comply with any of the ordinances of the City of Chicago or rules and regulations of the Board of Health of the City of Chicago.

"This permit is not transferable and is issued only for the person and premises named herein.

"By Direction of the Board of Health."

The second permit recited in substance the following:

"A Permit is hereby granted to Dean Milk Co., 2541 West Lake Street, Melrose Park, Illinois, subject to ordinances of the City of Chicago, and the rules and regulations of the Board of Health of the City of Chicago, to operate as a Milk Distributor."

The balance of the permit was the same as the previous exhibit.

On September 9, 1940, the hearing on defendants' motion for a stay of proceedings pending disposition of the case of Fielderest Dairies, Inc., against City of Chicago, United States District Court No. 316, was continued to October 21, 1940.

On September 19, 1940, the defendants filed their answer to the supplement to the amended and supplemental complaint, which, omitting the introductory matter and signatures, was as follows:

Answer to Supplement to Amended and Supplemental Complaint.

ANSWER TO SEPARATE ACTION IN CHANCERY.

(1) Defendants deny that any events alleged in said supplement to have occurred after the filing of the plaintiff's amended and supplemental complaint herein are material or pertinent to the issues involved in this cause.

(2) Defendants admit the allegations of paragraph 2 of said supplement.

(3) Defendants admit the allegations of paragraph 3 of said supplement.

(4) Defendants admit the allegations of paragraph 4 of said supplement.

(5) Defendants admit the allegations of paragraph 5 of said supplement excepting as to the following:

Defendants deny the allegation that the defendant, Herman N. Bundesen, at the meeting of the Board of Health held August 30, 1940, enquired of Fred V. Maguire, Assistant Corporation Counsel, as to whether or not the Board of Health had any alternative in the matter of revoking the permits theretofore issued to the plaintiff, and further deny that said Fred V. Maguire then and there advised said Herman N. Bundesen and the other members of the Board of Health present, that the board had no alternative of any kind in the premises or that the board was obligated by law to revoke said permits or that any advice given said Herman N. Bundesen, and the other members of the Board of Health present, by said Fred V. Maguire concerning the revocation of said permits was in subject or effect as alleged in said supplement.

Defendants state that the resolution unanimously adopted by the members of the Board of Health present did legally revoke and terminate the permits theretofore issued to the plaintiff by the said board.

Defendants deny that after the issuance of said permits the plaintiff did no act which warranted any revocation thereof and further deny that the action of said Board of Health, and the members thereof as such, was wrongful or without warrant in law.

Defendants further state the fact to be that the sale of milk by the plaintiff in quantities of less than one gallon in paper containers, sometimes known as single-service containers, and not in standard milk bottles, was in violation of the ordinance of the City of Chicago in such case made and provided.

(6) Defendants have no knowledge or information sufficient to form a belief with respect to the truth of the allegations of paragraph 6 of said supplement and therefore neither admit nor deny said allegations but ask that the plaintiff may be required to make strict proof thereof if upon the trial of this cause said allegations shall be relevant or material.

(7) Defendants admit that the revocation of said permits has not been rescinded but state that no demand or request that said revocation be rescinded has been made upon or to said Board of Health by the plaintiff.

ANSWER TO SEPARATE ACTION AT LAW.

1. With respect to paragraph 1 of the separate action at law, the defendants adopt by this reference thereto their answer to paragraphs 1 to 7, both inclusive, to the separate action in chancery contained in the supplement to amended and supplemental complaint and by this reference thereto incorpoarte all of said answer.

2. Defendants deny the allegations of paragraph 2 of the separate action at law.

[On October 18, 1940, United States District Judge Charles E. Woodward filed a memorandum directing the entry of a decree in favor of Fielderest Dairies, Inc., against the City of Chicago and other defendants, Rec. Vol. III, pp. 1752-1756, *City of Chicago, et al., Petitioners,*

v. *Fieldcrest Dairies, Inc., Respondent,* October Term, 1941, No. 706.]

On October 21, 1940, the hearing of the state court proceeding was postponed by the Circuit Court of Cook County to October 22, 1940, on which day the hearing was again continued to October 23, 1940.

[On October 23, 1940, the United States District Judge entered findings of fact, conclusions of law and the decree now under review by the Supreme Court of the United States, Rec. Vol. III, pp. 1758-1761, *City of Chicago, et al., Petitioners,* v. *Fieldcrest Dairies, Inc., Respondent,* October Term, 1941, No. 706.]

On October 23, 1940, and dates following, the Circuit Court of Cook County postponed the state court proceeding from time to time until November 29, 1940, on which date the plaintiff, Dean Milk Company, filed a sworn petition.

Text of Plaintiff's Petition Filed November 29, 1940.

Your Petitioner, Dean Milk Company, respectfully represents:

(1) That heretofore and on to-wit, May 15, 1940, Plaintiff filed its Complaint in Chancery herein, asking for injunctive and other relief, and that thereafter and on May 21, 1940, an Interlocutory Injunction was entered herein, from which an appeal was taken by Defendants, or some of them, to the Appellate Court of Illinois; that thereafter error was confessed in the Appellate Court of Illinois on behalf of Plaintiff, and said cause was remanded and redocketed in this court.

(2) Thereafter and on June 18, 1940, Plaintiff filed herein its Amended and Supplemental Complaint by leave

of court first had and obtained, praying for injunctive relief and for relief by way of mandamus, all of which will more fully appear from the files and pleadings filed in said cause.

(3) Thereafter and on June 25, 1940, the Defendants filed herein their motion, supported by verified petition, to stay the proceedings in the above entitled cause pending the disposition of a certain suit or proceeding then pending in the District Court of the United States for the Northern District of Illinois, Eastern Division, known and described as "*Fieldcrest Dairies, Inc., a corporation,* Plaintiff, v. *City of Chicago, a Municipal corporation, et al.,* Defendants, No. 316." In said petition it was alleged that the suit just described "involves the identical paper milk container and the construction and validity of the identical provision of the ordinance of the City of Chicago which are involved in the case at bar." Said petition recited certain proceedings had in said cause pending in the District Court of the United States, and further alleged, among other things:

> "All of the evidence necessary for the complete determination of the issues presented in the case at bar has been offered and received in the case pending in the United States District Court and a re-trial of those issues in the case at bar will result only in the imposition of additional expense upon the taxpayers of the City of Chicago.
>
> "Wherefore defendants pray that an order be entered by this Honorable Court staying proceedings in this case until the disposition of the case entitled *Fieldcrest Dairies, Inc.* v. *City of Chicago, et al.,* No. 316 in the District Court of the United States for the Northern District of Illinois, Eastern Division."

(4) By order entered on June 25, 1940, hearing on said motion and petition was continued, to be taken up thereafter, and on July 2, 1940, Defendants filed herein their

Answer to the Amended and Supplemental Complaint of Plaintiff theretofore filed herein on June 18, 1940.

(5) Said motion and petition to stay proceedings herein came on for hearing before the Court on September 9, 1940, and after being partially heard were ordered continued for further hearing at 10:00 o'clock A. M. on October 25, 1940.

(6) On September 9, 1940, by leave of court first had and obtained, Plaintiff filed herein its Supplement to its Amended and Supplemental Complaint heretofore filed herein, and thereafter and on September 19, 1940, Defendants filed their Answer to the Supplement to the Amended and Supplemental Complaint aforesaid.

(7) On October 18, 1940, after full hearing in the District Court of the United States of the said case of *Fieldcrest Dairies, Inc.* v. *City of Chicago,* No. 316, the Honorable Charles E. Woodward rendered a decision in said cause, a copy of which is attached hereto, marked Exhibit "A" and by this reference thereto, hereby made a part hereof.

(8) Thereafter, and on October 23, 1940, the Honorable Charles E. Woodward entered certain Findings of Fact and Conclusions of Law in said cause, and a Final Decree, true copies of which Findings of Fact, Conclusions of Law and Final Decree are attached hereto, marked Exhibits "B," "C" and "D," respectively, and by this reference thereto, hereby made a part hereof.

(9) Thereafter, Defendants, City of Chicago, et al., filed their notice of appeal from said Decree entered by the said Honorable Charles E. Woodward on October 23, 1940, and made application to stay the force and effect of said Decree pending said appeal, which application was denied.

(10) Thereafter, and on October 25, 1940, Defendants in said Federal Court cause filed a short record in the United States Circuit Court of Appeals for the Seventh Circuit, which was thereupon docketed as "*Fieldcrest Dairies, Inc., a corporation,* Plaintiff-Appellee v. *City of Chicago, a Municipal corporation, et al.,* Defendants-Appellants, No. 7402" in said court.

(11) Defendants, through their counsel, made application to the United States Circuit Court of Appeals for the Seventh Circuit, for the entry of an order granting supersedeas staying the force and effect of the Final Decree theretofore entered by the Honorable Charles E. Woodward, hereinabove fully described, and a copy of which is attached hereto marked Exhibit "D."

(12) Thereafter the application for supersedeas so made by said Defendants to the United States Circuit Court of Appeals was denied, leaving said Final Decree, Exhibit "D" hereto, in full force and effect.

(13) Petitioner further shows that, as hereinabove more fully set forth, it was represented to this Court that the disposition of said cause in the United States District Court would determine the issues presented in this cause and that said issues should not be re-tried herein, but should abide the determination of said issues in said Federal Court proceeding.

(14) Petitioner further represents that it is informed and believes and therefore states the fact to be that said appeal No. 7502 is still pending in the United States Circuit Court of Appeals and the determination thereof may be delayed for several months.

(15) Petitioner further represents that it is informed, believes and therefore states the fact to be that since

the entry of the decree, Exhibit "D" hereto, competitors of Petitioner have engaged in the sale of milk and milk products in paper bottles or single-service containers within the corporate limits of the City of Chicago without hindrance or molestation from the Defendants, or any of them. Petitioner seeks the right to use paper bottles or single-service containers, identical in all respects with those involved in and approved by said Federal District Court decree, whereas its competitors are using containers of a different type and make which have not been subjected to the same critical examination. Petitioner is thereby placed at a great disadvantage in the sale of its milk and milk products due to the failure and refusal of Defendants to issue or re-issue or restore to Petitioner the permits which are required under the ordinance of the City of Chicago as a prerequisite to engaging in the sale and distribution of milk and milk products within the corporate limits of the City of Chicago.

Petitioner therefore prays that an order be entered herein granting to Plaintiff the relief prayed for in its Amended and Supplemental Complaint as amended, heretofore filed herein, and that this Court retain jurisdiction of this controversy pending the final determination of said appeal No. 7502 now pending in the United States Circuit Court of Appeals, to the end that should said Decree from which said appeal is taken be affirmed, the order now to be entered herein shall become final, and should said Decree of the United States District Court be reversed or modified by the United States Circuit Court of Appeals in said case No. 7502, then that this cause shall stand for further hearing herein.

And your Petitioner will ever pray.

DEAN MILK COMPANY,
By CHAS. O. RUNDALL,
Its Attorneys.

CHAS. O. RUNDALL,
HORACE A. YOUNG,
Attorneys for Petitioner,
Dean Milk Company.

Attached to said petition as Exhibit "A" was the memorandum dated October 18, 1940, of Woodward, U. S. District Judge, and as Exhibits "B," "C," and "D," respectively, copies of the findings of fact, conclusions of law and decree of the United States District Court, per Woodward, District Judge, entered October 23, 1940, which are here omitted in printing because included in the Record (Vol. 3, pp. 1756-1761) of *City of Chicago, et al.*, Petitioner, v. *Fieldcrest Dairies, Inc.*, Respondent, October Term, 1941, No. 706.

On due notice, the Circuit Court of Cook County entered an order on December 3, 1940.

Text of Order of December 3, 1940.

This matter coming on to be heard upon the Amended and Supplemental Complaint of Plaintiff heretofore filed herein and the Answer of the Defendants filed thereto, and upon the Supplement to the Amended and Supplemental Complaint and the Answer of the Defendants thereto, and upon the Petition of the Defendants heretofore filed herein on June 25, 1940, praying that the above entitled cause

abate pending the disposition of a certain cause or proceeding then pending in the District Court of the United States for the Northern District of Illinois, Eastern Division, known as *Fieldcrest Dairies, Inc.*, Plaintiff v. *City of Chicago, et al.*, Defendants, No. 316, and upon the Petition of Plaintiff filed herein on November 29, 1940, upon notice to counsel for the Defendants and continued for hearing until this date, and the Court having examined said pleadings and Petitions and having heard arguments of counsel, and now being fully advised in the premises, Finds that the allegations of the Petition of Plaintiff filed herein on November 29, 1940, are true and that Defendants neither consent nor object to the entry of this order, but have agreed in open court that no interlocutory appeal shall be taken therefrom,

It Is Therefore, Ordered, Adjudged and Decreed as follows:

(1) That the Defendants and each of them, and their officers, attorneys, agents, inspectors, employees and all persons acting in privity with them, or any of them, be and they are hereby restrained and enjoined from—

(a) In any manner, or by any means, interfering with, obstructing or hindering the Plaintiff from the sale and distribution of its Grade A pasteurized milk or milk products in single-service containers or containers known as "Pure-Pak" containers, within the City of Chicago, provided that the sale and distribution of said milk and milk products otherwise conforms with the applicable ordinances of the City of Chicago and the statutes of the State of Illinois;

(b) Prosecuting Plaintiff, its officers, agents, employees and all persons acting in privity with them, or

any of them, in any action in law or in equity, or in any criminal action purporting or alleged to arise out of the so-called violation by Plaintiff of the ordinances or the Municipal Code of the City of Chicago regarding the sale of its Grade A pasteurized milk or milk products in single-service containers or containers known as "Pure-Pak" containers, within the City of Chicago, provided that the sale and distribution of said milk and milk products otherwise conforms with the applicable ordinances of the City of Chicago and the statutes of the State of Illinois;

(c) Arresting, molesting, annoying, injuring, harming or abusing Plaintiff or its officers, agents or servants in the sale and distribution of Plaintiff's Grade A pasteurized milk and milk products in single-service containers or "Pure-Pak" containers within the City of Chicago, provided that the sale and distribution of said milk and milk products otherwise conforms with the applicable ordinances of the City of Chicago and the statutes of the State of Illinois;

(d) Confiscating, damaging, injuring or destroying any or all of Plaintiff's Grade A pasteurized milk or milk products contained in single-service containers or "Pure-Pak" containers which at any time or times may be within the corporate confines of the City of Chicago, provided that the said milk and milk products otherwise conform with the applicable ordinances of the City of Chicago and the statutes of the State of Illinois.

(2) That Defendants, and each of them, be and they are hereby ordered and directed to rescind the action taken on August 30, 1940, in connection with the purported revoca-

tion of certain licenses heretofore issued to Plaintiff, and restore or re-issue to Plaintiff said permits, being milk plant permit No. 37 for its milk plant at Chemung, Illinois milk distributor permit No. 37 for premises located at 2511 West Lake Street, Melrose Park, Illinois, permits for five vehicles, Nos. 27 to 31, both inclusive, and to restore or re-issue to Plaintiff permit No. 8605 for a food purveyors and milk and milk products store located at 3819 Southport Avenue, Chicago, Illinois, provided, however, that said plant, premises, vehicles and store conform with the applicable ordinances of the City of Chicago, and provided further that the milk and milk products sought to be dealt with therein and therefrom may be sold and distributed in paper bottles or single-service containers known as "Pure-Pak" containers if the said milk and milk products otherwise conform with the applicable ordinances of the City of Chicago.

(3) That a writ of mandamus issue herein directing and compelling Defendants, and each of them, to issue or to re-issue and restore to Plaintiff a milk plant permit for its milk plant at Chemung, Illinois, a milk distributor's permit for premises located at 2511 West Lake Street, Melrose Park, Illinois, permits for five vehicles and a food distributor's permit for a store located at 3819 Southport Avenue, Chicago, Illinois, provided, however, that said plant, premises, vehicles and store conform with the applicable ordinances of the City of Chicago, and provided further that the milk and milk products sought to be dealt with therein and therefrom may be sold and distributed in paper bottles or single-service containers known as "Pure-Pak" containers if the said milk and milk products otherwise conform with the applicable ordinances of the City of Chicago.

(4) The provisions of this order shall be effective until the further order of this Court and pending the final disposition of the case of *Fieldcrest Dairies, Inc.*, Plaintiff v. *City of Chicago, et al.*, Defendants, No. 316 in the District Court of the United States for the Northern District of Illinois, Eastern Division, now pending on appeal as case No. 7502 in the Circuit Court of Appeals of the United States in and for the Seventh Circuit.

(5) For good cause shown, and the Court being of the opinion that the injunction herein ought to be granted without bond, it is further Ordered, Adjudged and Decreed that Plaintiff be not required to file any bond herein and that the filing of such bond be and the same is hereby excused.

ENTER:

(Signed) PHILIP J. FINNEGAN,
Judge.

Dated December 3, 1940.

Approved as to form:

BARNET HODES, Corporation Counsel,
FRED V. MAGUIRE and ALEXANDER J. RESA,
Assistant Corporation Counsel,
Attorneys for Defendants,

By (Signed) FRED V. MAGUIRE,
Assistant Corporation Counsel.

By (Signed) J. HERZL SEGAL,
Assistant Corporation Counsel.

No further proceedings have been had in the above case in the Circuit Court of Cook County, Illinois, and the time for an appeal from the order just set forth has expired.

D. JOINT CONCLUSIONS OF COUNSEL WITH RESPECT TO STATE COURT PROCEEDINGS.

Counsel for petitioners and for respondent in the Supreme Court of the United States agree:

1. That the state court proceedings have not decided any question of law or fact relevant to a decision by the Supreme Court of the United States of the pending cause entitled, *City of Chicago, et al.*, v. *Fieldcrest Dairies, Inc.*, October Term, 1941, No. 706;

2. That the plaintiff, Dean Milk Company, whose wholly-owned subsidiary is Fieldcrest Dairies, Inc., and the defendants, City of Chicago, *et al.*, (petitioners in the Supreme Court of the United States) each and all requested the Circuit Court of Cook County, Illinois, to stay the proceedings in said court pending the final disposition of the case of *Fieldcrest Dairies, Inc.*, v. *City of Chicago, et al.*, then pending in the District Court of the United States for the Northern District of Illinois, being

the case now pending on grant of certiorari by the Supreme Court of the United States.

Respectfully submitted,

CITY OF CHICAGO, *a Municipal Corporation,*
BOARD OF HEALTH OF THE CITY OF CHICAGO,
DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

By BARNET HODES,
Corporation Counsel of the City of Chicago,
511 City Hall, Chicago, Illinois,
Attorney for Petitioners.

JAMES A. VELDE,
Assistant Corporation Counsel,

WALTER V. SCHAEFER,
Of Counsel.

FIELDCREST DAIRIES, INC.,
Respondent,

By FRED A. GARIEPY,
1 North LaSalle Street,
Chicago, Illinois,

OWEN RALL,
135 South LaSalle Street,
Chicago, Illinois,

JOHN SPALDING,
1 North LaSalle Street,
Chicago, Illinois.
Attorneys for Respondent.

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of The City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

BRIEF IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

FRED A. GARIEPY,
OWEN RALL,
JOHN SPALDING,
Counsel for Respondent.

BARNARD & MILLER, Printers, FRAnklin 0562, CHICAGO

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SUMMARY OF BRIEF.

STATEMENT. PAGE

The Circuit Court of Appeals based its decision on the sole ground that the 1939 Milk Pasteurization Plant Act of the State of Illinois (Illinois R. S., 1941, Chapter 56½, "Foods", pars. 115-134) withdrew from the City of Chicago the power to prohibit, as distinguished from regulate, types of milk containers approved by the State of Illinois. The opinion did not in any respect limit or disparage the power of the state legislature over the entire subject, but rather gave that power full recognition as being superior to the power of the City of Chicago, which is a creature of the state legislature. Emphatically, the Circuit Court of Appeals did not decide either that the ordinance was unreasonable or that it was unconstitutional and there is no occasion to consider those questions at this stage of the proceedings..... 1

ARGUMENT.

I. The court properly decided the question of Illinois law since cases like Railroad Commission of Texas v. Pullman Company, 312 U. S. 496, requiring the Federal court to stay its determination of state law pending action in the state courts are limited in their application to proceedings where the state has furnished a statutory appeal from the order being attacked in the Federal court. The courts below properly noticed the passage of the Illinois statute during the pendency of the suit and since an interpretation of the statute was necessary to a decision of the case, the Circuit Court of Appeals was bound to determine the question and did not err in so doing..... 7

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II. The court below correctly decided the question of Illinois law. The City of Chicago is a creature of the state, and its powers are strictly construed. Such powers may be withdrawn by implication. No city ordinance contrary to the statutes or public policy of the state, as enacted by the state legislature, may be enforced even though passed before the statute was enacted. The only effect of Section 19, the so-called "saving clause", was to prevent a repeal of all of the City's power by implication. It did not nullify express provisions of the statute nor give the City the power to prohibit what was permitted by statute and by lawful regulations pursuant to the statute. The state is superior to the city and not the city to the state. Under City of Rockford v. Hey, 366 Ill. 526, the City of Chicago has no power to prohibit the sale of milk in the City of Chicago from the plaintiff's plant in Chemung, McHenry County, Illinois, since the plant, equipment and method of operation have been approved by the director of the Department of Health of the State of Illinois pursuant to Illinois statute 10

III. The opinion of the Circuit Court of Appeals is in harmony with the decisions of this Court and since it was not based upon any constitutional determination or upon any determination of the reasonableness of the ordinance all of the petitioners' argument under Point II of their supporting brief is disregarded..... 44

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of The City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

BRIEF IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

STATEMENT.

MAY IT PLEASE THE COURT:

The District Court decided (35 Fed. Supp. 451; R. 1752) that plaintiff's Pure-Pak paper milk bottle was a "standard bottle", that if the ordinance were interpreted so as to prohibit it the ordinance would be unreasonable under the Illinois law, and that the passage during the pendency of the suit of the Illinois statute on pasteurization de-

prived the City of Chicago of the power to prohibit plaintiff's container because the sovereign state had approved it.

The Circuit Court of Appeals (122 F. 2d 132; R. 1782), held, one judge dissenting—giving assurance that the case had full consideration in the conference room—that the District Court was bound to notice the passage of the pasteurization statute *pendente lite* (in obedience to *Vandenbark* v. *Owens-Illinois Glass Co.*, 311 U .S. 538, 543), and that under the state-court decisions that statute took away from the City of Chicago the right to prohibit plaintiff's paper milk bottle. This was the only ground of the decision.

The court said:

> "Having thus concluded, we find no occasion to discuss at length or decide other controverted questions as to the validity of the ordinance."

The Circuit Court of Appeals also said that the language of the ordinance (Sec. 3094; R. 108) was to be interpreted as the aldermen meant it in 1935, and that "standard milk bottle" as then used did not permit plaintiff's container. This holding was perhaps due to our failure to cite in our brief *City of Chicago* v. *Alpert*, 368 Ill. 282, which contrary to the earlier case[1] cited by the C. C. A. held that legislative language is dynamic, not static.[2]

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[1] *People* v. *Barnett*, 319 Ill. 403.

[2] *City of Chicago* v. *Ben Alpert, Inc.*, 368 Ill. 282, at p. 286:

> "The General Assembly, in the quoted delegation of power, ['to direct the location and regulate the use and construction of * * * garages * * * within the limits of a city or village'] did not define 'garages' thereby limiting the authority delegated by making the word 'garages' a static or dormant con-

In a studied effort to inject supposed questions of far-reaching public concern into a simple case, the defendants have filed a petition of 59 pages contending that the decision of the Circuit Court of Appeals on the question of local law is wrong, or at least is so doubtful that the court should have left the decision of the question hanging in the air until somehow a state court had decided the question, and that the ordinance is not unconstitutional, etc., etc.

Our answer is that the Circuit Court of Appeals decided the question of local law correctly and that unless this Court grants certiorari to review that decision, there is no occasion to consider constitutional questions which the City pretends to see in this case. Neither is there, at this stage of the proceedings, any occasion to pay ex-

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cept rendering cities impotent to cope with the ever-changing conditions of a mobile and complex society. In short, cities and villages are not restricted, in directing the location and regulating the use and construction of garages, to such premises as may have conformed to the accepted popular definition of the word 'garage' in 1911, when it was incorporated in the statute. Conditions attending the storage and parking of automobiles in metropolitan areas today are vastly different from those prevailing a quarter of a century ago when the State empowered cities to regulate and license garages. It is common knowledge that in cities considerable areas are devoted to parking and storing motor vehicles. Casual observation will disclose that in some instances the premises are denominated parking lots and, in others, outdoor or open-air garages. We are not required to be insensible to this mode of transacting an important part of the automobile business. The express power to regulate the use and construction of garages is sufficiently comprehensive to authorize cities and villages to license open-air as well as closed public garages. A legitimate exercise of this power is immune from constitutional assault."

cessive tribute to the legislative branch, as the City does. The court below gave full effect to all of the rules which this Court has consistently adhered to. It properly decided that under Illinois law the legislative action of the state legislature was superior to that of the Chicago aldermen.

If the writ is allowed we shall of course wish to be heard on the question of Illinois law as to whether the ordinance is a reasonable one but since the Court of Appeals placed its decision on the other ground, we will stand in this answer on the ground stated in that court's opinion.

Despite defendants' protestation (Petition, pp. 37-38) that they are not asking this Court to reverse the judgment on the ground that the courts below should not have passed on the question of Illinois law (whether the Chicago ordinance was superseded by the Illinois Milk Plant Pasteurization act of 1939) defendants place great reliance on *Railroad Commisson of Texas* v. *Pullman Company*, 312 U. S. 496 (1941), which is wholly inapplicable unless the defendants contend that the Federal equity court should not have decided the question of Illinois law at all. That case held that where there is a readily available statutory method of reviewing a commission order, a three-judge Federal court ought not to enjoin operation of the order if that determination involved a doubtful question of state law.

Since the defendants, in spite of citing the *Pullman Co.* case, expressly disclaim any intention of asking for a postponement of the decision of the question of Illinois law until, perchance, it may be decided in some other case by a state court, the present argument of the defendants amounts to no more than this: that they think the decision by the Circuit Court of Appeals of the question of Illinois law was wrong. That is not the type of case

in which we understand certiorari is usually granted—not, at least, unless the decision is plainly wrong, which certainly the decision below was not. The court below was—we submit with all deference to this Court—in as good a position as is this Court to determine the question of Illinois law upon which the decision was based. The decision is of local interest only and does not present a question of such importance as justifies the awarding of the writ of certiorari. No conflict with Illinois decisions is shown, and in fact none exists.

If the court below misinterpreted the legislative will, the Illinois legislature can correct it. Twice the petitioners sound false alarms on that point. On pages 31-32, they say:

> "The effect of the opinion is that it is beyond the power of a state legislature to prescribe minimum standards to be observed throughout the state and at the same time to authorize municipalities to fix more stringent standards if they consider it necessary to do so."

And on page 35:

> "The boundary between the fields of state and local regulations may not be clearly defined. The decision of the Circuit Court of Appeals in effect takes away from the state legislature the power to fix the boundary and the court, in the exercise of its function to construe statutes, assumes the power itself."

In determining that the state legislature had, in fact and contrary to the defendants' contentions, withdrawn from the City of Chicago and taken back to the sovereign state the regulation of certain aspects of milk sanitation and control, the Circuit Court of Appeals emphatically did not disparage or cast any slightest doubt upon the power of the state legislature. The above quoted statements from petitioners' brief are not justified by any-

thing stated or decided in this case by the Circuit Court of Appeals and are wholly and entirely false.

In deciding the question presented, the Circuit Court of Appeals enforced the supreme power of the Illinois legislature over its reluctant and sometimes arrogant creature, the City of Chicago, and the false criticism now made of the court below is not actually based upon any refusal of the court to abide by the legislative will, but rather is grounded upon the proposition that the City of Chicago itself wishes to avoid the supremacy of state legislation which has thwarted the city's attempt to prevent the sale of milk in single-service containers, with all of their fitness for the prevention of disease and with their other benefits. Significantly, it is not the State of Illinois which is here complaining; it is only its creature, the City of Chicago. If the court below incorrectly read the legislative intention of the state legislature, the city is not without its remedy before that legislature. And in the meantime, no one is being harmed by the use of paper milk bottles. The City of Chicago has admitted this by permitting, since the date of the decision of this case by the District Court (October 18, 1940) the use in the city of millions of other paper containers without any regulation and without any proof of sanitation such as was made in the instant case, although these other containers are not of the type involved in this suit and are not protected by any injunction of any court, state or Federal. No harm has resulted from the use of such other containers without protection of any injunction, or from the distribution of milk in plaintiff's containers under protection of the present injunction, and the fact that the defendants have voluntarily permitted the use of these other containers is eloquent proof that the defendants well know that no public health hazard is involved in the use of paper containers.

ARGUMENT.

I.

The court below was correct in deciding the question of Illinois law.

The defendants submitted in the trial court and in the Circuit Court of Appeals the question whether the Milk Pasteurization Plant Act of 1939 (Illinois R. S. 1941, Chap. 56½, Paras. 115-134) withdrew from the City of Chicago the right to prohibit the use of plaintiff's paper milk bottles which pursuant to such statute have been approved by the appropriate health official of the State of Illinois. Grasping at straws they now make for the first time the contention that the courts below should not have decided the question at all, but in some manner should have remitted the parties to the state courts for a decision of that question, citing *Railroad Commission of Texas* v. *Pullman Company*, 312 U. S. 496. Great reliance is placed on this decision by the defendants, but they ought not to be heard now to say that the courts below should have postponed the decision of the very question which all parties below submitted to such courts for decision. Furthermore, the *Pullman Company* case is not authority in the present proceeding, because in that case the Texas statute provided for a statutory method of appeal from the order of the Railroad Commission. The Illinois statutes have no comparable provision with respect to statutory appeals either from the action of the Board of Health of the City of Chicago (which, incidentally, recommended in October, 1939, that plaintiff's containers be permitted

to be used, R. 1698-1699) or from the action of the City Council in passing or refusing to pass an ordinance.

The provision for appeal from an order of the Railroad Commission of Texas is set forth in the marginal note.[1] It was on account of this statute that this

[1] 18 Vernon's Annotated Revised Civil Statutes of Texas (1926), pp. 357-358, (Title 112, Chap. 11, Art. 6453) provides:

"Art. 6453. (6657) Appeal

"If any railroad company or other party at interest be dissatisfied with the decision of any rate, classification, rule, charge, order, act or regulation adopted by the Commission, such dissatisfied company or party may file a petition setting forth the particular cause or causes of objection to such decision, act, rate, rule, charge, classification, or order, or to either or all of them, in a court of competent jurisdiction in Travis County, Texas, against said Commission as defendant. Said action shall have precedence over all other causes on the docket of a different nature, and shall be tried and determined as other civil causes in said court. Either party to said action may appeal to the Appellate Court having jurisdiction of said cause; and said appeal shall be at once returnable to said Appellate Court at either of its terms; and said action so appealed shall have precedence in said Appellate Court of all causes of a different character therein pending; provided, that, if the court be in session at the time such right of action accrues, the suit may be filed during such term and stand ready for trial after ten days' notice. Provided further that no preliminary injunction shall be issued without notice to the opposite party and that no temporary restraining order shall be granted without notice to the opposite party unless it shall clearly appear from specific facts shown by affidavit or by the verified petition that immediate and irreparable injury, loss or damage will result to the applicant before notice can be served and a hearing had thereon. Every such temporary restraining order shall be endorsed with the date and hour of issuance.

Court held that a three-judge Federal Court sitting in equity ought not to have decided a doubtful question of Texas law concerning the validity of an order of the Railroad Commission, but should have required the parties to pursue the statutory method provided by Texas law. In no respect is the case comparable to the present one. In fact, we point to the language of Mr. Justice Frankfurter in the *Pullman Company* case as authority for the proposition that this Court ought not to substitute its judgment for that of the Circuit Court of Appeals on a matter of Illinois law. The Court said (p. 499):

"Had we or they no choice in the matter but to decide what is the law of the state, we should hesi-

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shall be forthwith filed in the clerk's office and entered of record, shall define the injury and state why it is irreparably (irreparable) and why the order was granted without notice, and shall by its terms expire within such time after entry, not to exceed ten days, as the court or judge may fix, unless within the time so fixed the order is extended for a like period for good cause shown, and the reasons for such extension shall be entered of record. In case a temporary restraining order shall be granted without notice in the contingency specified, the matter of the issuance of a preliminary injunction shall be set down for a hearing at the earliest possible time and shall take precedence of all matters except older matters of the same character; and when the same comes up for hearing the party obtaining the temporary restraining order shall proceed with the application for a preliminary injunction, and if he does not do so the court shall dissolve the temporary restraining order. Upon two days' notice to the party obtaining such temporary restraining order the opposite party may appear and move the dissolution or modification of the order, and in that event the court or judge shall proceed to hear and determine the motion as expeditiously as the ends of justice may require."

tate long before rejecting their forecast of Texas law."

No argument is or can be made that the question of Illinois law submitted to the courts below was unnecessary to a decision of the case. The fact is that the courts below were required to notice the passage of the Illinois statute which occurred during the pendency of the suit. Plaintiff's complaint which the District Court had clear jurisdiction to entertain challenged the validity of the ordinance of the City of Chicago which was claimed by the City to prohibit the use of plaintiff's container. There was, therefore, no escape from deciding whether the state legislature had withdrawn from the City the power to enforce an ordinance outlawing what the sovereign state had legalized.

We submit that the City's contention made for the first time in this Court should not be entertained because it was not submitted to the court below and that if entertained the decision should be against the City's contention because the case relied on is in no respect analogous to the present situation.

II.

The court below correctly decided the question of Illinois law.

Whether or not the City of Chicago can by the provisions of an ordinance enacted in 1935, prohibit the use of a milk bottle which is approved of and permitted use throughout the state of Illinois by an act of the Legislature in July, 1939, is certainly not a Federal question. It is clearly a question of Illinois law.

No federal question was involved in the decision of the Circuit Court of Appeals when it decided:

(1) That the provisions of the 1935 ordinance of the City of Chicago which attempted to regulate the use of milk bottles was superseded by the Milk Pasteurization Plant Act of July 1, 1939, and was repugnant to the latter statute.

(2) That the construction of the ordinance contended for by the City of Chicago, if accepted, would allow the City to prohibit, by ordinance, the use of a milk bottle approved by the legislature and would permit it to enact and enforce ordinances contrary to the statutes of the state of Illinois and the public health policy of the state as enunciated and laid down by the state legislature.

(3) That the well established rule of law in Illinois expressed by an unbroken line of Supreme Court decisions is that no city or village can enforce or enact ordinances repugnant to state statutes and the public policy of the state.

The petitioners state (page 9) in their petition for a writ of certiorari, to review the decision of the Circuit Court of Appeals:

> "* * * nevertheless the majority opinion of the Circuit Court of Appeals sets forth a number of grounds for holding the ordinance unreasonable, indicating that the majority considered the ordinance unconstitutional (R. 1794)."

And further petitioners state on page 9:

> "There is here a question of the propriety of a judicial pronouncement that a city regulation is invalid under the fourteenth amendment * * *"

Under the heading "Reasons For Allowance of The Writ" (page 9) petitioners further state that the Circuit Court of Appeals has decided "an important question of local law in a way clearly in conflict with the local law."

Petitioners cannot create and present a Federal or a constitutional question to this Court for a decision when the sole ground of the decision below was clearly one of Illinois law regarding the effect of the state statute passed in 1939 on the ordinance enacted in 1935.

Petitioners really confess that no constitutional or Federal question is involved when they say (page 9):

> "It was not necessary for the Circuit Court of Appeals to decide this constitutional question since it held that the city had been deprived of the power to pass the ordinance."

We are therefore unable to find any rational basis for reference by petitioners (page 9) to the Fourteenth Amendment being involved.

Further, under "Specification of Errors" (page 16) petitioners make no reference to a constitutional or Federal question being involved in the decision of the Circuit Court of Appeals. The decision of the Circuit Court of Appeals states that:

> "The question for consideration is whether the ordinance now contravenes the public policy of the state of Illinois, and whether so or not, was the situation at the time of the institution of suit so altered as to make the prohibition contained in the ordinance unreasonable and void." (R. 1789.)

And further in its decision the court, having decided that the legislative act superseded the ordinance, said:

> "Having thus concluded we find no occasion to discuss at length or decide other controverted questions as to the validity of the ordinance." (R. 1794.)

It is thus very apparent that the court did not pass on any Federal question in its decision. It followed the well established law in Illinois and the rule in the decision of this Court in the case of *Vandenbark* v. *Owens*

Illinois Glass Co., 311 U. S. 538 (1941) with regard to the force of the state statute.

It is difficult to believe that the defendants are serious in contending that the rulings of the trial court and the Circuit Court of Appeals "have clouded the powers of Illinois municipalities" (p. 37). This statement is not reconcilable with the practice of the City of Chicago in voluntarily permitting other dairies, not protected by any injunction, to sell milk in paper containers of a type not involved in the present litigation. Millions of such containers have been used since October 18, 1940, the date on which the district judge handed down his decision. A refusal on the part of the City to permit the use of these unprotected paper containers would most certainly have resulted in a speedy determination in the state courts of the precise question now raised in its petition, because Federal court jurisdiction based on diversity of citizenship would have been lacking as to numerous local milk dealers.

Under the heading entitled "Reasons For Allowance of The Writ" (p. 9) petitioner cites *Koy* v. *City of Chicago*, 263 Ill. 122, (1914) and *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939), to support its contention that the Circuit Court of Appeals erred in interpreting Illinois law applicable to the problem involved. These two cases clearly have no competency or force to support this contention. In the case of *Koy* v. *City of Chicago*, 263 Ill. 122, the Court merely determined the right of the city to prescribe conditions under which milk might be pasteurized and, specifically, that a provision of an ordinance requiring a recording apparatus to be installed on milk pasteurizers to record the temperature of the milk during the operation was not unreasonable and was therefore valid.

The case of *City of Ottawa* v. *Brown*, 372 Ill. 468

(1939), now relied on by petitioner, decided simply that the enactment of an ordinance by the City of Ottawa in 1916 brought that City within an exception to an Act of the General Assembly of Illinois regulating the transportation, sale and use of gasoline "except in cities or villages where regulatory ordinances on the subject are in full force and effect." The question there decided by the court was solely one of fact, namely, was the 1916 ordinance governing the sale of gasoline in the City of Ottawa of such a character as to bring it within the statutory exception? The opinion of the court is completely devoid of language which, by any stretch of the imagination, could be construed to bear on the issues of the case at bar or to be in conflict with the decision of the Circuit Court of Appeals in the instant cause.

On the other hand, the case of *City of Rockford* v. *Hey*, 366 Ill. 526 (1937), is a clear-cut expression by the Supreme Court of Illinois which clearly evidences that court's attitude in a case which is substantially the same in principle as the case at bar. It was held in that case that the City of Rockford had no power by ordinance to require the owners of ice-cream factories in the cities of Sterling and Dixon (who were licensed by the Department of Health of the State of Illinois) to have their factories inspected by Rockford inspectors as a condition precedent to the sale in Rockford of ice cream products manufactured in Sterling and Dixon.

In the instant case the City undertakes to go much further; it seeks not merely to inspect, license or regulate single-service containers (the use of which the sovereign state permits) but it would if allowed to do so absolutely prohibit the use of such containers. It is at once apparent that this prohibition is precluded by the *Hey* case. If the city's present contention were sus-

tained the ordinance would effectually operate outside of the limits of the City of Chicago by interfering with and rendering practically worthless a state license issued to milk distributors who have complied with statutory regulations which permit such distributors to do what the City of Chicago takes upon itself to tell them they may not do. Obviously the City of Chicago cannot thus do indirectly what the City of Rockford could not do directly.

Petitioner contends (p. 12) that one of the reasons for the application for certiorari is that "the dictum of the Circuit Court of Appeals that the ordinance is an unreasonable exercise of the police power conflict with a long line of decisions of this court." We respectfully reply that there is no such dictum in the opinion of the Circuit Court of Appeals. The object of the ordinance being protection of public health, this object was fully satisfied by the legislature enacting the Milk Plant Pasteurization Act on July 24, 1939, (Ill. Rev. Statutes, 1941, Chapter 56½, pars. 115-134), and thereby expressing the public health policy of the State of Illinois as it applied to containers for milk. The City, the creature of the state, is certainly not possessed of power to nullify this action of the parent body from whom all the City's powers are derived.

We turn to the Illinois statutes and decisions which furnish abundant support for the opinion below and clearly refute petitioners' argument.

First, the City of Chicago has no inherent power. It is a creature of the General Assembly. To prohibit the use of any article, it must be able to point to a state statute giving it the power to do so. Furthermore, it is a cardinal rule of law that grants of powers to municipalities are strictly construed. This is well established by a long line

of well-reasoned cases and has been the subject of frequent public criticism by the distinguished corporation counsel of Chicago, Mr. Barnet Hodes,[1] but continues to be the law of Illinois, (*Bullman* v. *City of Chicago*, 367 Ill. 217 [1937]).

The rule was well stated in *City of Chicago* v. *Murphy*, 313 Ill. 98, (1924) as follows (p. 101):

> "Cities may exercise only such powers as are expressly delegated to them by the legislature. The legislature is vested with all powers not taken from it by the State or Federal Constitution. Many of its powers may be delegated by it to the cities created by

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[1] "Over and over, the Illinois Supreme Court has clung to the traditional view of all jurisdictions, and has declared: A city 'may exercise only such powers as are expressly delegated to it by the legislature and such as are necessarily implied from those expressly given'. And also: A city 'possesses no inherent power.' Time and again, cities have attempted, first by one device and then by another, to break through the barrier set up by these interpretations. But there has been little success in this direction."

"In applying the rule of strict construction whenever cities claim the right to exercise certain powers, the courts are following a well settled principle which, as much as anything else, hamstrings municipalities. This rule, as reiterated in *Arms* v. *City of Chicago*, [314 Ill. 316], a 1924 case, is:

> 'Statutes which grant powers to municipal corporations are strictly construed, and any fair or reasonable doubt of the existence of such powers is resolved against the municipality which claims the right to exercise them.'

From *Law and the Modern City*, (1937) Barnet Hodes, pp. 36, 38. (The author's preface states: "The author, of course, accepts full responsibility for the views expressed. They in no way express any official position of the law department of the City of Chicago.")

its act. Cities are creatures of the legislature and derive their existence therefrom. They have no inherent powers. All powers of cities are derived from acts of the legislature. The fact that the legislature has the power to enact a law does not confer that power upon city councils but the same must be by legislative act conferred."

If the City of Chicago ever had the power to prohibit the use of single service containers by the ordinance in question that power now no longer exists, because of the fact that its exercise would be repugnant to subsequently enacted legislation of the sovereign state.

Section 3094 of the Milk Ordinance of the City of Chicago, here involved, provides:

"Any milk or milk products sold in quantities of less than one gallon shall be delivered in standard milk bottles; provided, however, that nothing herein contained shall be construed to prohibit hotels, soda fountains, restaurants, and similar establishments from dispensing milk or milk products from sanitary dispensers approved by the board of health" (Rec. 108).

Contrast this provision with the state statute enacted during the pendency of this suit (Act of July 24, 1939, Ill. R. S. 1941, ch. 56½, Foods, pars. 115-134). Section 2 of this Act requires that any person operating a pasteurization plant who distributes or sells pasteurized milk for consumption *anywhere in the State of Illinois* shall make application to the State Department of Public Health for a certificate of approval.

Section 4 requires the Department to make an inspection of the plant and if the plant, equipment *and methods of operation* are found to comply with the provisions of the Act, to issue a certificate of approval.

Section 6 is as follows:

"Inspection and samples.] Any person, operating

a pasteurization plant or having made application for a Certificate of Approval for the operation of a pasteurization plant shall at any time allow the Department to inspect such plant and to take such samples as may be deemed necessary by said Department."

Section 8 provides:

"Products to be sold in original containers.] All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized. It shall be unlawful for hotels, soda fountains, restaurants, grocery stores, milk depots, milk stations and similar establishments to sell or serve any pasteurized milk or milk product except in the original container in which it was placed at the point of pasteurization, provided that this requirement shall not apply to milk or milk products consumed on the premises which may be served from the original container or from a dispenser approved by the Department for such service. The sale or distribution of bulk, loose or dipped pasteurized milk or milk which has been heated within the purview of this Act is hereby prohibited."

Section 9 states:

"Sellers and distributors within act.] Any person selling, delivering or distributing milk or milk products in the State of Illinois who shall heat milk or milk products or subject milk or milk products to other treatment in an effort to make the milk or milk products safe for human consumption or to preserve its keeping qualities shall comply with the provisions of this Act."

The first paragraph of Section 15 is as follows:

"Any pasteurization plant coming under the provisions of this Act shall conform with all of the following items of construction, equipment, maintenance and operation *and in accordance with minimum requirements adopted by the Director* for interpretation and enforcement of this Act." (Italics ours.)

Following and as an integral part of this section are certain items, including the following:

"Item 10. All multi-use containers and equipment with which milk or milk products come in contact shall be constructed in such manner as to be easily cleaned and shall be kept in good repair. *Single service containers,* caps, gaskets and similar articles *shall be* manufactured and transported in a sanitary manner." (Italics ours.)

"Item 18. Bottling or packaging of milk and milk products shall be done at the place of pasteurization by approved mechanical equipment."

Pursuant to the power therein granted, the Director of the Illinois Department of Public Health has promulgated "minimum requirements" for interpretation and enforcement of this Act, providing, in part, as follows:

"Satisfactory compliance.—This item shall be deemed to have been satisfied if: * * *

(5) All *single-service containers,* caps, gaskets and similar articles are manufactured and handled in accordance with requirements of the Department.

(a) The buildings and rooms in which *single-service containers* and container caps and covers are manufactured, packed, stored, and handled shall be clean, well lighted and ventilated, and free from dust and flies, as prescribed in items 1, 2, 3, 4, 6, 7, 8 and 11.

(b) The average bacterial plate count of the stock from which *single-service containers* and container caps and covers are made shall not exceed 100 colonies per gram. No substance shall be present in finished single-service containers and container caps and covers which is toxic.

(c) All operations of the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13, 14 and 15.

* * * * * * *

(e) All *single-service containers* and container caps and covers shall be so treated as *to be as imper-*

vious to milk and milk products as practicable." (Italics ours.)

Section 16 of the state statute is in part as follows:

> "Denial or revocation of certificate—grounds—hearing.] The Department may either refuse to issue, or may refuse to renew, or may suspend, or may revoke any certificate of Approval because of the violation of any of the provisions of this Act or for any of the following causes:
>
> (a) Insanitary conditions of plant surroundings within the control of the plant management, insanitary methods of handling milk, milk products or *milk containers or equipment.*
>
> (b) Employment of careless, indifferent and inefficient personnel.
>
> (c) Violation of any of the provisions of this Act or of the minimum requirements for interpretation and enforcement of the Act.
>
> (d) Failure to display Certificate of Approval to the public at all times when such Certificate of Approval has been issued as provided in this Act.
>
> (e) Displaying to the public any Certificate of Approval which has been suspended or revoked or which has expired. * * *" (Italics ours.)

We shall refer below to the effect to be given to Section 19 of the Act, relied upon by the City as preserving its right to prohibit paper bottles which the state permits.

Another statute should be noticed, the statute (Ill. Rev. Stats., 1941, c. 111½, "Public Health", par. 22) establishing the State Board of Health, whose duties are now transferred to the Illinois Department of Health by Ill. R. S., 1941, c. 127, "State Government," par. 55. The Public Health Statute provides in part:

> "Sec. 2. The State Board of Health shall have the general supervision of the interests of the health and lives of the people of the state. * * *

> The Board shall have authority to make such rules and regulations * * * as they may from time to time deem necessary for the preservation and improvement of the public health, * * *.
>
> It shall be the duty of all local boards of health, health authorities and officers, * * * of the State or any * * * city * * * thereof to enforce the rules and regulations that may be adopted by the State Board of Health * * *".

It will be noticed that under the terms of the above Acts the State of Illinois, as it has the undoubted right to do, has taken unto itself the approval of not only the plant but also the equipment and methods of operation of every person (including the respondent) who pasteurizes milk for sale in the State of Illinois. It has also occupied the following fields of milk sanitation: It requires that the "bottling or packaging" of milk shall be done at the place of pasteurization; it requires that all pasteurized milk shall be placed in final delivery containers in the plant in which it is pasteurized; and it makes it unlawful for any person in the state to sell or serve any pasteurized milk except in the original container in which it was placed at the point of pasteurization.

It was recognized expressly, both by the statute and by the lawful requirements made pursuant to it, that single service containers as now known, when kept as provided in the requirements and when "so treated as to be as impervious to milk and milk products as practicable" *are entirely proper containers for the sale of pasteurized milk throughout the State of Illinois. There is not one phrase or word in the statute mentioning the words "standard milk bottles", but rather the entire statute is broad and uses the words "multi-use containers", "single-service containers", "container caps", "fabricating plant", and "covers";* and Section (A) of the provision, under "Minimum Requirements" expressly refers to buildings and

rooms in which single-service containers and container caps and covers are manufactured, packed, stored and handled, and requires that they shall be clean, well-lighted, ventilated, and free from dust and flies.

The decisions of the Illinois courts and in fact those throughout the land are uniform that a municipal ordinance which conflicts with any statute or public policy adopted by the state legislature is invalid. And in Illinois it is clear that the General Assembly may resume at any time the power previously delegated to a municipality, and this may be done by implication.

In *City of Chicago* v. *Jensen*, 331 Ill. 129 (1928), the defendant was convicted of operating a beauty parlor without a license, in violation of an ordinance of the City of Chicago. Prior to this conviction a state statute went into effect, providing for the regulation of beauty culture. On appeal, the judgment of conviction was reversed, the court pointing out that the ordinance was inconsistent with the after-enacted statute. In discussing prior decisions of the Supreme Court, and the rule of law to be drawn therefrom, the court said, at page 131:

> "This court held that while the legislature may delegate power to a municipality to grant a license for a particular occupation and exact a license fee therefor, it may at any time take away such power and the State may resume the exercise of the power; that the legislature may repeal or amend any of the provisions of the act for the incorporation of cities and villages at pleasure, and if the provisions of the statute are inconsistent with the powers conferred on the city, the statute will operate as a repeal or amendment of the powers so conferred upon the city; that a city, as a subordinate political authority, cannot interfere with the validity or force of a license issued by the State under a statute; that the statute controls the whole subject matter.
>
> "The statute repealed any power the city may have had to regulate and license beauty culture, the judg-

ment convicting appellant was erroneous, and it will be reversed."

In the case of *Northern Trust Co.* v. *Chicago Rys. Co.*, 318 Ill. 402 (1925), holding that the Public Utilities act of Illinois repealed by implication the power granted to cities and villages to regulate such matters as headlights on street cars, it was argued that since the ordinance requiring street cars to be equipped with brightly lighted headlights was passed prior to the enactment of the first Public Utilities act, the ordinance would not be abrogated until the Utilities Commission had taken some action inconsistent therewith. The court said (p. 412):

> "When the first Public Utilities act came into force, on January 1, 1914, the power of the city over the subject matter of that act ceased to exist, and it could not thereafter pass new ordinances or enforce existing ordinances with reference to matters within the exclusive jurisdiction of the Public Utilities Commission. The power to enforce proceeds from the present or existing power or authority to enact or to provide. A municipality cannot be said to possess the power to enforce an ordinance concerning a subject upon which it has lost the power to pass the ordinance. Any attempt to enforce in such a situation would be defeated by interposing the act withdrawing the municipality's power to enact".

And in the early case of *Wilkie* v. *City of Chicago*, 188 Ill. 444 (1900) a Chicago ordinance required persons desiring to work as plumbers to obtain a license and pay an annual license fee of $30.00. Shortly thereafter the legislature of Illinois passed an act providing that persons desiring to engage in the business of plumbing should be examined as to their qualifications by a board created for that purpose and that successful applicants should receive certificates. In a suit to restrain the enforcement of the ordinance on the two-fold ground that (1) the city was

without power to license the business of plumbing, and (2) even if it had such power, the ordinance was in conflict with the later statute, and hence invalid, the Supreme Court affirmed a decree restraining the enforcement of the ordinance.

After pointing out that the power of the city to license the occupation of plumbing was, at least, very doubtful, the court said, at pages 452-3:

> "While the legislature may delegate the power to municipalities to grant a license for a particular occupation and to exact a license fee, they may, at any time, take away such power or resume the exercise of it themselves. The legislature may repeal or amend any provision of the act for the incoproration of cities and villages at their pleasure, and if the provisions of the act of 1897 are inconsistent with the power claimed by the city, they will operate as a repeal or amendment of the charter to that extent. * * * By this law the legislature have prescribed the test which shall enable a person to engage in the business of plumbing, and the city, by its proviso, has prescribed another and additional test. The legislature, by the law, say he is authorized to work at his trade throughout the State if he has the required certificate. The city of Chicago, by the proviso to the ordinance passed in pursuance of that law, says that he shall not work at his trade in that city except by paying $30 additional and receiving another license. The city, as a subordinate political authority, cannot interfere with the validity or force of the license issued by its board under the law. That these provisions are inconsistent is plain."

All the texts on the subject of municipal legislation announce the same rule. In 2 McQuillin on Municipal Corporations, 572 (2d ed.—1928), cited in opinion of the Circuit Court of Appeals, (Rec. 1791), the learned author states the principle that ordinances must harmonize with the public policy and common law of the State, in the following language:

> "*A Municipal corporation cannot, without special*

> *authority, prohibit what the policy of a general statute permits.* Nor, on the other hand, can an ordinance permit that which the State's policy forbids. Consequently under a general grant of power, a municipal corporation cannot adopt ordinances 'which infringe the spirit, or are repugnant to the policy, of the state as declared in its legislation.' It thus follows that if the state has expressed through legislation a public policy with reference to a subject, a municipality cannot ordain in respect to that subject to an effect contrary to, or in qualification of the public policy so established. * * *" (Italics ours.)

And in 43 Corpus Juris, 215-217, "Municipal Corporations," the rule regarding the invalidity of an ordinance which is inconsistent with the policy of the State as expressed by statute is thus stated:

> "Since a municipal corporation is a creature of the state, continuing its existence under the sovereign will and pleasure of the state, possessing such powers and such only as the state confers upon it, subject to addition or diminution of power at the state's supreme discretion, municipal regulations *must not directly or indirectly contravene the general law, nor can such regulations be repugnant to the policy of the state as declared in general legislation.*" (Italics ours.)

The Illinois cases are uniformly to the same effect.

In *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311 (1911) the Supreme Court passed upon the validity of Section 1160 of the Municipal Code of Chicago which then provided for a penalty of not less than $5.00 nor more than $100.00 fine for any person who sold or offered for sale any impure or adulterated food. A statute, the Pure Food Act of July 1, 1907, enacted two years after Section 1160 of the Municipal Code was passed, provided for a greater penalty. In sustaining the ordinance as valid the court at page 313 said:

> "The laws of the state operate within the limits of

municipal corporations the same as elsewhere, unless otherwise clearly provided by municipal charters or statute. *Local laws and regulations are at all times subject to the paramount authority of the legislature.*" (Italics ours.)

In the last paragraph of this decision the Supreme Court used the following language which is indeed applicable to the ordinance here, saying at page 315:

> "Municipal authorities cannot, under a general grant of power, such as article 5 of the City and Village Act, adopt ordinances which infringe the spirit of a State law or are repugnant to the policy of the State as declared by general legislation, but the police regulations of a municipality may differ from those of the State upon the same subject, if they are not inconsistent therewith. (*McPherson* v. *Village of Chebanse*, 114 Ill. 46.) *This ordinance does not prohibit what the statute permits.* While the ordinance attaches a less penalty for its violation than does the statute, we find no repugnancy between them. The general policy under both is the same." (Italics ours.)

The pertinent language in this decision is "this ordinance does not prohibit what the statute permits." Obviously this is the test to be applied when an ordinance and state statute are to be construed.

Again, in the case of *City of Marengo* v. *Rowland*, 263 Ill. 531 (1914) the court held an ordinance of the City of Marengo requiring the closing of barber shops on Sunday invalid and again stated on page 534:

> "Municipal authorities under general grant of power cannot adopt ordinances *which infringe the spirit of a State law, or are repugnant to the general policy of the State* (*City of Chicago* v. *Ice Cream Co.*, 252 Ill. 311; 25 Amer. & Eng. Ann. cases, 675, note; *City of Clinton* v. *Wilson, supra.*) The public policy of the State is found in its constitution and statutes, and, when they are silent, in its judicial decisions and the constant practice of its public officials." (Italics ours.)

We submit, that if, as the court said in these decisions, a city cannot *adopt* such an ordinance, then *it certainly cannot by any process of reasoning enforce one that prohibits a right given by statute.* Since the legislature has clearly expressed the public policy of the state on health and the use of single-service milk containers such public policy is not to be shackled by ordinances or regulations of a city repugnant to it.

To prohibit the use of single-service containers would result in nullifying a provision of the statute, which is the paramount regulation. Legislatures are not subservient to municipalities in their expression of public policy but the municipality is subservient to the legislature.

This rule has been applied in a number of Illinois cases, some of which are cited in the opinion of the Circuit Court of Appeals. *Village of Atwood* v. *Cincinnati, etc. R. Co.*, 316 Ill. 425 (1925); *City of Marengo* v. *Rowland*, 263 Ill. 531, 534 (1914); *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311, 315 (1911); *City of Chicago* v. *Drogasawacz*, 256 Ill. 34, 37 (1912).

In *Kizer* v. *City of Mattoon*, 332 Ill. 545, (1928) the validity of an ordinance regulating the storage of inflammable liquids, enacted after July 1, 1919, was involved. On July 1, 1919, an Illinois statute became effective:

> "Except in cities and villages where regulatory ordinances upon the subject are in full force and effect the Department of Trade and Commerce shall have power to make and adopt reasonable rules and regulations," etc.

The court said (p. 549):

> "Police regulations enacted by a city under a general grant of power may differ from those of the State upon the same subject, *provided they are not inconsistent therewith.*" (Italics ours.)

It also said (p. 549-550):

"The power to pass ordinances such as the one here in question was delegated to cities by the State through its legislature. Where the State delegates such power to a municipality it may resume it through legislative action and thus deprive the municipality of the right to exercise it. (*City of Chicago* v. *Phoenix Ins. Co.*, 126 Ill. 276; *Wilkie* v. *City of Chicago*, 188 *id.* 444.) Prior to July 1, 1919, the exclusive power of regulation here involved was lodged in cities and villages by virtue of clause 65 above quoted. By its act to regulate the storage, transportation, sale and use of gasoline and other volatile oils, in force July 1, 1919, the State withdrew from municipalities this exclusive power of regulation and gave to the Department of Trade and Commerce exclusive power to make and adopt reasonable rules and regulations governing the keeping, storage, transportation, sale or use of gasoline and volatile oils, except in cities or villages where regulatory ordinances upon the subject were in full force and effect. * * * The City of Mattoon on July 1, 1919, not having in full force and effect regulatory ordinances on the subject, its delegated power to enact such ordinances was automatically withdrawn by the State and the exclusive power to make such regulations for the city of Mattoon became vested in the Department of Trade and Commerce. The city of Mattoon having been divested of this power by the State, could not by its own action reacquire such power, but could only regain it by subsequent action on the part of the legislature."

A year later, in construing Section 38 of the Illinois Prohibition Act and an ordinance enacted by the City of Litchfield which prohibited the manufacture and sale of intoxicating liquor, the Supreme Court of Illinois in *City of Litchfield* v. *Thorworth*, 337 Ill. 469 (1929) pointed out that the city was bound by the definition of intoxicating liquor contained in the statute and had no authority to prohibit the sale of liquor not prohibited by the statute. At page 475 the court said:

"Section 2 of the Prohibition act defines the phrase

> 'intoxicating liquor.' It is the sale of liquor of the kind specified in the statute that is prohibited. The statute confers authority on municipal corporations to prohibit by ordinance the sale of the kind of liquor prohibited by the statute. The municipality is bound by the definition contained in the statute and cannot prohibit the sale of liquor not prohibited by the statute."

It is clear beyond peradventure from the foregoing cases, that the opinion below is correct on the matter of local law, that the City of Chicago has no inherent power, that its power to regulate milk comes from the State, that the State has the right to take the city's power away before or after the enactment of the city's ordinances, that the ordinance must not be in conflict with the provisions or public policy of the State statutes, and that the city has no right to prohibit what the State statutes or valid rules and regulations adopted pursuant thereto permit.

It will be well to bear in mind those general rules in considering the "saving clause" which the City relies on, namely Section 19 of the Act. Before passing to a discussion of that question, we wish to call the Court's attention again to the limitation on the power of the city imposed by *City of Rockford* v. *Hey*, 366 Ill. 526 (1937). In that case it was held that the City of Rockford had no power (under the same sections of the statute that the City of Chicago is relying on in the present case) to require the owners of ice cream factories in Sterling, Illinois and Dixon, Illinois, to have their factories inspected by Rockford inspectors as a condition precedent to the sale in Rockford of ice cream products manufactured in such factories. The Court said (p. 530):

> "In Illinois, a city organized under the Cities and Villages act has such powers, only, as are therein

expressly delegated by the General Assembly or necessarily implied to render the grant of specific powers effective."

and at p. 531:

"Legislative powers of municipal corporations are strictly construed, and any rational doubt as to the existence of power must be resolved against the municipality."

The Court then stated the issue (pp. 533-534):

"In short, the issue is whether plaintiff, the City of Rockford, may require ice cream factories, located in other cities, to meet sanitary requirements prescribed by the former city in order to entitle them to Rockford licenses upon payment of the annual fee for inspection of their plants.

"Municipalities have no extra-territorial jurisdiction except insofar as it is expressly or impliedly delegated by statute. (55 A. L. R. 1183; *City of Chicago* v. *Brent*, 356 Ill. 40; *Strauss* v. *Town of Pontiac*, 40 *id.* 301.) An inherent or implied limitation upon the city in the exercise of the powers delegated to it by the legislature is that such powers shall be exercised within the corporate boundaries of the municipalities."

"The legislature has not delegated power to municipal corporations to pass a regulatory and license ordinance which assumes to regulate ice cream factories outside their corporate limits. The provisions which plaintiff admits extend to ice cream factories in other cities are so inseparably connected with the other provisions applicable locally as to render the entire enactment void."

It is clear under this case that jurisdiction of the plaintiff's plant at Chemung, McHenry County, Illinois, is exclusively within the jurisdiction of the Department of Health of the State of Illinois and that the State statute relating to pasteurized milk which provides, in part, that all pasteurized milk shall be placed in its final delivery

containers at the plant, that bottling or packaging of milk shall be done at the place of pasteurization by approved mechanical equipment, and that it shall be unlawful for any person to sell or serve any pasteurized milk except in the original container in which it was placed at the point of pasteurization, contemplates the approval by the State Department of Health of plaintiff's operations without requiring approval by the defendant city.

It is important to notice this geographical division of authority between the State of Illinois and the City of Chicago, because the sole reliance of the City of Chicago for its power is on cases like *Koy* v. *City of Chicago*, 263 Ill. 122, and *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311, where the pasteurizing or manufacturing plants were located within the confines of the City of Chicago.

The contention of the defendant here, as in the Circuit Court of Appeals, that its right to prohibit single-service containers is preserved by Section 19 of the Milk Plant Pasteurization Act of 1939 (the so-called "saving clause") is untenable. That section provides (Ill. Rev. Stat., 1941, Chapter 56½, Paragraph 133):

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk, and pasteurized milk products, provided such regulation [does] not permit any person to violate any of the provisions of this act."

The word "does" is not a part of the act as passed, but may fairly be implied.

The proviso that "such regulation not permit any person to violate any of the provisions of this act" is simply a codification of the rule of municipal law in Illinois to

the effect that a city ordinance, even though passed under a power granted by the state, is at all times subject and subordinate to the state statutes or other regulations on the same subject promulgated by the state. The proviso does not expressly or impliedly give the City any power to prohibit what the State, by statute and regulations pursuant to statute, has expressly permitted.

The statute cannot be construed to mean (and we do not understand the defendants to so contend) that specific matters shall be subject to determination by both the state and by the city at one and the same time. That would mean chaos, a result not to be imputed to the legislature and a construction to be avoided if at all possible. In *Village of Atwood* v. *Cincinnati, Indianapolis and W. R. Co.*, 316 Ill. 425 (1925), that precise question was before the Supreme Court of Illinois, the issue being whether the Public Utilities Act of Illinois repealed by implication the power long before granted to municipalities to require watchmen at railway crossings. The court recognized the rule (pp. 432-433) that "the police power is an attribute of sovereignty and is primarily vested in the General Assembly, which has the right at any time to recall it from the agency to which delegated, and after being recalled to retain it or to confer it upon some other agency or government" and after finding (p. 430) that the Public Utilities Act gave the commission the power to require railroads to station flagmen at grade crossings, the court held (p. 431):

> "If both the commission and the village authorities can exercise the power, their requirements with reference to the same crossing may be utterly contradictory, for the village board may direct the stationing of a flagman while the commission may order a separation of grades. Obviously, in such cases both cannot be obeyed, and concurrent authority often leads

> to conflict and results in confusion. The Public Utilities act enjoins obedience to the commission's orders. That act is the later one and covers the whole subject of promoting the safety of the public at the intersections of streets and railroads. It is complete in itself and evidently was intended by the General Assembly to supersede the power conferred by subsection 27 of Section 1 of article 5 of the general Cities and Villages act to require railroad companies to keep flagmen at street crossings."

The court held that the Public Utilities Act and the power of the village were so clearly inconsistent that both could not stand and that therefore the power of the village was withdrawn and transferred to the Commerce Commission.

It is true that the question in that case was whether there was a repeal by implication of the powers granted to municipalities but what the court said about the conflict of concurrent jurisdiction and about the desirability of avoiding such conflict is very appropriate to the case at bar. We have conceded that that case did not turn on the construction of a saving clause. We further conceded that except to the extent that the State by and pursuant to the 1939 milk act occupies the field of milk regulation, the powers of the City of Chicago are unimpaired.

In *Northern Trust Co.* v. *Chicago Rys. Co.*, 318 Ill. 402, (1925) already referred to, where the question was whether the City of Chicago retained its power to require street cars to maintain brightly lighted headlights, the court said (p. 410):

> "Did the Public Utilities act of 1913, which conferred this ample control and supervision over public utilities, including street railroads, deprive municipalities organized under the general Cities and Villages act of the power to pass ordinances requiring street railroads to equip their cars with brightly lighted headlights? If both the commission and the city

> could exercise the same power at the same time with reference to the same subject matter their requirements in respect of the same utility might be utterly contradictory. In such cases the utility could not obey both the commission and the city council. Yet the Public Utilities act enjoined obedience to the commission's orders and prescribed severe penalties for failures to comply. Obviously, concurrent authority would lead to conflict and confusion."

There, again, the question was whether the conflict between the Cities and Villages Act and the Public Utilities Act was so complete as to indicate that the latter had repealed the former, but the reasoning of the court supports our contention that where the legislature has withdrawn a portion of the city's power and conferred it on a new agency (in our case, the Director of the Department of Health of the State of Illinois) at least to the extent of any conflict between the state and municipal authorities the state is dominant.

The doctrine of municipal law upon which we rely is well stated by the distinguished corporation counsel of the City of Chicago in Law and the Modern City (Barnett Hodes, 1937, p. 44) as follows:

> "We have seen, up to this point, how two salient principles are invoked to restrict cities—the principle of express authority from the state, and the canon of strict construction against the city. Suppose a city, in its effort to control its own destiny sails by those two shoals. Is it then safe in the sea of state control? Hardly. Ahead is a new reef.
>
> "The new peril is the principle that if the state sees fit to exercise power in its own name over an activity, the city is at once thrust out of the picture. This is the case even where the city has had jurisdiction for generations and its right to exercise the power has been heretofore firmly established. Application of this principle in Illinois has resulted in

> a gradual whittling away of many powers of cities, ranging in importance from control of beauty shops to regulation of transportation lines and other utilities."

With these authorities in mind, it seems clear that the only effect to be given to Section 19 is, first, that it prevents a repeal by implication of all power of municipalities to regulate milk, and, second, that the power of such municipalities continues unimpaired as to the numerous matters not referred to in the statute or in the minimum requirements promulgated pursuant thereto. It, however, gives municipalities no right to enact or enforce ordinances in conflict with the statute or the regulations adopted thereunder. The majority opinion below (Rec. 1792) adopted and succinctly stated this view thus:

> "It therefore appears reasonable that the sole purpose of the saving clause was to prevent a construction by implication withdrawing the vast authority which the city had theretofore had over the milk industry."

The awkward result of a different construction of Section 19 was then pointed out thus (Rec. 1793):

> "The defendants' contention, if sustained, would give the City a broader power than that provided by the Legislature for the state. It would make the state subservient to the city. It would impute to the legislature the purpose of withdrawing the power exercised by the city and by the saving clause reconferring such power. We are unable to believe that such an incongruous result was intended."

The present contention of the defendants that it was never intended by the state legislature that the Milk Pasteurization Plant Act of 1939 should be applicable at all to Chicago was not made in either court below. The de-

fendants' present argument (Petition, p. 27) that the state statute was intended to apply only to those municipalities which were so small that their officers were unable to adopt and enforce adequate regulations of the milk industry is made for the first time in this Court. This intention is said by petitioners to be "clear" (Petition, p. 27). Nothing appears in the Act to support this unusual and unreasonable interpretation. We reply that if the construction of the saving clause contended for by the defendants be adopted, then it follows as a logical inference that the Act is confined in its operation solely to such remote and sparsely inhabited communities. This incongruous construction of the statute would have the effect of rendering that statute inoperative and ineffective throughout the largest and most important part of Illinois. Such a result is certainly to be avoided unless the language of the Act does not permit any alternative. Not one word or syllable appears in the Act which even suggests that the legislature intended the Act to be limited in its territorial application. And if the legislature had so intended it would certainly have expressed that intention in words by a saving clause similar to that in *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939), where such a legislative intention existed and was clearly expressed. This supposed intention of the legislature is merely conjectural and gets not the slightest support from any words in the Act.

The statement by petitioners (Petition, pp. 28-29) that the majority opinion of the Circuit Court of Appeals disregards the plain language of the statute in holding that the City's power is less than it was before the statute was passed, is sustainable only by adopting the view of the defendants (advanced for the first time in this Court) that the July 24, 1939, statute is applicable only to rural

areas and other small communities and not to Chicago, and, as just stated, that contention is not supported by any language in the statute.

Defendants' statement (Petition, p. 31) that the effect of the opinion of the court below is to hold that it is *beyond the power* of a state legislature to prescribe minimum standards throughout the state and at the same time authorize municipalities to fix more stringent standards is a strange perversion of the language of the opinion, which expressly stated "that the city, by virtue of the saving clause, has the power to regulate paper containers * * * but we are unable to accept the theory that it has authority to outlaw that which the state has legalized." Furthermore, the question is not whether it is or is not beyond the *power* of the state to prescribe minimum standards and to authorize municipalities to fix more stringent standards (a power which undoubtedly exists and which we do not question) but *whether the legislature has manifested an intention in the statute under discussion to permit municipalities to fix standards which forbid what the statute permits.* In other words, does the Act manifest an intention by the legislature that it shall become operative in a given municipality, in whole or in part, subject to the approval of, or acceptance by, such municipality, of its provisions? It is only by adopting the view that the Act was intended to have a limited territorial operation that the criticism of this aspect of the opinion becomes understandable. But, as we have above indicated, such an interpretation is impossible.

The further statement of the petitioners (Petition, p. 31) that the Circuit Court of Appeals "disregarded" the language of the saving clause on the ground that if the saving clause was given effect "it would make the

state subservient to the city" finds no support in the language of the opinion. What the court did say was that "*the defendants' contention*, if sustained, would give the city a broader power than that provided by the Legislature for the state. It would make the state subservient to the city." The propriety of this view of the Court is at once apparent when it is realized that *defendants' contention* is that the statute in question was intended by the Legislature to have but a limited territorial application to become effective subject to the approval of the City of Chicago and such other municipalities as might enact ordinances on the same subject. Since there is nothing in the language of the statute to sustain such an interpretation, we submit that the petitioners in stating that the Circuit Court of Appeals "disregarded" the language of the saving clause have taken the same liberty with the language of the opinion as they do with the language of the statute.

The further statement by the petitioners in attempted justification of their criticism of the opinion (Petition, p. 32) that "the state is not subservient to the city if the state permits what the city forbids; each is merely regulating in its own sphere to meet its own particular needs" can be described only as astonishing. The contention is made in even bolder form in the following language (Petition, p. 32) "there is no rule of law that * * * the municipality may not forbid what the state permits." Such statements may be accurate expressions of the rule applicable in states which have adopted "home-rule"; they are in violent conflict with the law in Illinois. The reluctant admission (Petition, p. 32) that there is a rule that where a statute and ordinance conflict, or when an ordinance is contrary to a public policy, the statute

controls, is modified by the statement that such rule applies only when the contrary intention of the Legislature does not appear in the language of the statute. That intention does not appear in the present statute. The *assumption* by the defendants that the statute was intended to have a limited territorial application and that it was to be operative only in those cities and villages which were unable or unwilling to regulate the matters therein specified does not appear in the language of the statute, and there is, therefore, no necessity to discuss the exception to the rule. The rule itself applies: the inconsistent ordinance must yield to the statute.

The Circuit Court opinion gave full effect to the object of Section 19, the "saving clause", in holding that its only effect was to prevent a repeal by implication of the City's entire power to regulate the sale of pasteurized milk. The so-called "saving clause" simply indicated that the statute should supersede the power of the municipality *only to the extent that the state had entered the field of milk regulation.*

As part of the record in the present case there has been printed (R. 23-112) the milk ordinance of the City of Chicago passed January 4, 1935, the rules and regulations of the Chicago Board of Health, and certain resolutions by the Board of Health.* A comparison of the provisions of

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* Exhibit A attached to the complaint indicated by typographical differences what part of the exhibit was the ordinance, what part was rules and regulations and what part constituted the so-called public health reasons. These are all printed in the record in one style of type so that it is difficult to determine where the ordinance leaves off and the rules and regulations of the Board of Health begin. It is also difficult to find where each section of the

the ordinance, and particularly the rules and regulations of the Board of Health, with the 1939 Milk Act passed by the legislature, will indicate to what greater extent than the state statute the Chicago city ordinance goes. It provides for licenses both of sellers and their vehicles (R. 33, R. 34), for the display of the license emblem on each vehicle (R. 36), for the revocation of the license (R. 37), for the labeling and placarding of all bottles, cans, packages, and other containers enclosing milk or any milk product (R. 37), for the inspection of dairy farms (R. 39), for the examination of samples (R. 40), and the permissible "plate counts" for bacteria (R. 44), none of

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ordinance begins and we therefore supply the following table:

	Chicago Milk Ordinance.	Record Page
Sec. 3082	Definitions	26
Sec. 3083	Sale of aduiterated milk prohibited	32
Sec. 3084	Permit to sell, etc.	33
Sec. 3085	License required for sale of milk or milk products	34
Sec. 3086	Application—Separate license for each place of business—change of location	34
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Sec. 3091	Inspection of dairy farms and milk plants, report to be posted	39
Sec. 3092	Examination of samples	40
Sec. 3093	Kinds of milk—requirements	45
Sec. 3094	Dipping—delivery containers—delivery at quarantined places	108
Sec. 3095	Products shipped from beyond limits	110
Sec. 3096	Notification of disease	110
Sec. 3097	Suspicion of infection—procedure	111
Sec. 3098	Limit of time of sale	111
Sec. 3099	Penalty	111

which subjects is covered by the state statute. It is obvious that the object of Section 19 was to preserve to the City the right to continue the ordinances and regulations on those subjects not occupied by the state system of supervision.

The next, and, we think, determinative question, is whether, in fact, the state of Illinois has occupied the field of approving types of containers so that any action of the City of Chicago in conflict therewith is void.

We submit that the state has, under the terms of the Milk Act of 1939, given its approval to paper containers (termed in the Act single-service containers, but at the present time the only single-service containers in commercial use are paper). As has been seen, Section 4 of the state statute provides for the issuance of a certificate of approval to a pasteurization plant after an inspection "if the plant, equipment and methods of operation" are found to comply with the provisions of the Act. The plaintiff's plant at Chemung, McHenry County, Illinois, is equipped only for the bottling of milk in Pure-Pak paper containers on machines leased from the Ex-Cell-O Corporation, and the plaintiff does not have facilities to bottle milk in glass containers (R. 890).

An integral part of its "method of operation", approved by the State of Illinois (R. 695-696) is the packaging of milk in these containers. That the method of packaging milk is just as much a part of the method of operation which the Director of the Department of Health of the State of Illinois approved, is clearly indicated by the requirements of Section 8 that all pasteurized milk shall be placed in final delivery containers in the plant in which pasteurized and by the provision of Section 15, Item 18, that "bottling or packaging of milk and milk products shall be done at the place of pasteurization by approved me-

chanical equipment." This, of course, means "Approved by the Director of the Department of Health of the State of Illinois."

The Ex-Cell-O Pure-Pak machine, pictures of which are rather poorly reproduced in the printed record (R. 1469, R. 1498-1501), is **equipment** adapted solely to the packaging of milk in Pure-Pak paper bottles by means of a mechanical operation whereby that part of the paper bottle coming in contact with the milk is not touched by human hands at the dairy and before being filled with milk is immersed in a hot paraffin bath, then cooled in the refrigeration unit, and automatically filled, sealed and stapled.

Section 16 (a) of the state statute gives the Department the right to suspend its certificate of approval because of unsanitary conditions of "**milk containers or equipment**". This clearly shows supervision by the State of Illinois of the pasteurization plant, the method of doing business, the equipment, and milk containers, and is an occupation of that field, at least with respect to the approval of the type of container, to the exclusion of the City.

We have shown above repeated references in the statute, and the state rules and regulations promulgated pursuant to it, recognizing paper containers, and in view of the approval by the State of Illinois, pursuant to the state statute, of both the pasteurization plant and the method of operation, namely the use of paper containers instead of glass containers, we insist that the State of Illinois has withdrawn from the City of Chicago the right to prohibit (as distinguished from regulate) paper bottles. On one hand the state approves the pasteurization plant and the type of container and makes it illegal to sell milk in any way except in that container and on the other hand

the City of Chicago steps in and says you may not sell in that type of container. The city is not attempting to *regulate* the container approved by the state, but to *prohibit* it, and the decisive question is whether a creature of the state, such as the City of Chicago, may challenge the approval by the parent state made pursuant to state law, of a method of operation recognized by, although not required by, the statute. We think, under the cases already cited under this heading, the answer is obvious.

Those cases hold clearly that in instances of conflict between state authority and municipal authority, the latter must give way, and we can think of no sharper conflict than the present instance in which the state approves and the city attempts to forbid.

We may ask whether in this particular case an application of this rule will lead to justice or injustice. We submit that it will lead to justice. In this case we have the City of Chicago aligning the *supposed* judgment of fifty aldermen rendered in the year 1935, at a time when these containers were not widely known, against a majority of the Board of Health of the City of Chicago acting in 1939, the General Assembly of the State of Illinois, (which recognized single-service containers as proper in the 1939 Act), the Director of the Department of Health of the State of Illinois, (who has approved the plaintiff's plant and its method of operation), the United States Public Health Service (which has amended its model ordinance expressly to permit single-service containers), and the practical experience of hundreds of other municipalities.

III.

The opinion of the Circuit Court of Appeals is in harmony with the decisions of this Court.

Petitioner also contends that the Circuit Court of Appeals' opinion is contrary to decisions of this Court. This is an inaccurate statement for this Court in *Erie Railway Co.* v. *Tompkins*, 304 U. S. 64, and *Thompson* v. *Magnolia Petroleum Co.*, 309 U. S. 478, stated that the Circuit Court of Appeals and Districts Courts were in duty bound to follow the law of the state courts and that there was no "general law". In construing the ordinance and statute in question here, the Circuit Court of Appeals, as abundantly shown under Point II above, followed the state law on the subject. Under the rule announced by this Court in the cases mentioned above, it ought not to have done otherwise. The Circuit Court of Appeals *did not* decide any constitutional question and *did not* decide any question of the reasonableness of the milk ordinance, which under Illinois law is a judicial question. Therefore, all of the defendants' argument under Point II of their supporting brief (Petition, pp. 38-58) is disregarded.

CONCLUSION.

WHEREFORE, respondent prays that the Petition for Writ of Certiorari to the United States Circuit Court of Appeals for the Seventh Circuit be denied.

FIELDCREST DAIRIES, INC.,
Respondent.

By FRED A. GARIEPY,
OWEN RALL,
JOHN SPALDING,
Its Attorneys.

Chicago, Illinois,
November 10, 1941.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of the Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT, THERE HEARD ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of the Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT, THERE HEARD ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.

BRIEF OF RESPONDENT

STATEMENT OF THE CASE

Regarding the reasonableness of the ordinance, petitioners fail to state that the Master in Chancery who heard the evidence found (R. 1734):

> "There is, in my opinion, strong basis for a finding that plaintiff has proven by a preponderance of the

> evidence that its containers are meritorious and should be permitted to be used."

Both courts below, sitting in Illinois and being familiar with Illinois law, were in agreement that the state Milk Pasteurization Act of 1939 withdrew from the City of Chicago the power to prohibit, as distinguished from regulate, plaintiff's single service containers.

The District Court held that the ordinance was unreasonable, and therefore invalid under Illinois law, if construed to prevent the use of paper milk bottles as "standard milk bottles". Petitioners argue in their brief (pp. 34-36) that the Circuit Court of Appeals also held that the ordinance was unreasonable. That Court, after holding that the City of Chicago had no power to enforce the ordinance prohibiting paper milk bottles after the passage of the Milk Pasteurization Act of 1939, stated:

> "Having thus concluded we find no occasion to discuss at length or decide other controverted questions as to the validity of the ordinance."

In view of this statement, it is difficult to agree with the petitioners that the Circuit Court of Appeals actually decided that the ordinance was invalid for unreasonableness, but we can freely concede that the comments made in the majority opinion do not in any way disapprove the finding of the District Court on this issue.

One of the points on which we rely in this Court is that the plaintiff's paper milk bottle is a "standard milk bottle" and is therefore not prohibited by section 3094 of the Chicago ordinances. The trial court so held, but this holding was disapproved by the Circuit Court of Appeals. We believe that considerations not adequately presented to that court, but which will be found in our Point IV, below, indicate that the trial court was correct in finding that the container is a standard milk bottle.

The trial judge considered the evidence and exhibits for several months and then found that respondent's single-service containers present "no new or unusual health hazard" (R. 1752) and that respondent's single-service containers "conform with the sanitary and health requirements of the city ordinances of the City of Chicago" (R. 1753).

The trial court also found that "the evidence shows that they are safe and sanitary containers in which milk may be delivered. The uncontradicted evidence shows also that containers and receptacles less meritorious in structure and design from those of plaintiff's are in daily ouse in the City of Chicago for the sale of milk, chocolate milk, ice cream, and other liquids by drug stores, hotels, restaurants and soda fountains. . . The dispensing of such articles—including milk and milk products—in paper containers is not, as shown by the evidence, deemed to create any hazard to the public health" (R. 1752-1753).

We respectfully contend that in determining the meaning and validity of the ordinance in question and the effect of the 1939 Milk Pasteurization Act enacted by the legislature, the Circuit Court of Appeals and the trial court were bound to decide the issues of law according to the law of Illinois as pronounced by legislative action and by the decisions of the Supreme Court of the State. *Vandenbark* v. *Owens-Illinois Glass Co.*, 311 U. S. 538, 543. Adopting the rule set forth in this decision, the Circuit Court of Appeals and the trial court found the issues of law in favor of the respondent and we submit that their decisions are in harmony with the law of the State of Illinois.

ARGUMENT

I.

The Ordinance Is Repugnant to the Illinois Statute of 1939 and Is Therefore Invalid.

[Answer to Petitioners' Brief, pp. 12 to 33.]

The city contends (pp. 17-22) that the Illinois Milk Pasteurization Act of 1939 (Ill. Rev. Stat. 1939, c. 56½, pars. 115-134) did not—contrary to the opinion of both courts below—withdraw from the City of Chicago the power to prohibit the use of paper bottles. We strongly contend that it did, and that the trial court, as a Federal Court, was bound to and properly did give effect to the state law, although it was enacted during the pendency of the suit. *Vandenbark* v. *Owens-Illinois Glass Co.*, 311 U. S. 538.

No Illinois case interpreting the statute involved has been cited and so far as we know no Illinois court has passed on it. We agree that the Federal Courts, in which the present suit was pending, were entirely competent to decide the question of Illinois law and that this Court is likewise competent to decide the question of local law if it is willing to add or substitute its judgment for that of the courts below.

On pages 31-34 of their brief, the petitioners show that there is nothing in *Railroad Commission of Texas* v. *Pullman Co.*, 312 U. S. 496 (1941) or in *Hawks* v. *Hamill*, 288 U. S. 52 (1933) which should preclude a decision of the question of local law by a Federal Court. The only con-

trary intimation that has ever been made in this case appeared in the petition for certiorari (pp. 36-38) and in petitioners' reply to our answer (pp. 3-4), and we can therefore agree with the statement on page 31 of the petitioners' present brief:

> "The position of the petitioners on this aspect of the case requires an explanation."

Jurisdiction of the Federal Court was invoked in the present case solely because of diversity of citizenship and we know of nothing in any decision of this Court in any way disabling the District Court or the Circuit Court of Appeals from deciding as a matter of local law the effect to be given to an Illinois statute passed while suit was pending. The fact that the statute was passed while suit was pending is sufficient proof that plaintiff did not select the forum with its eye to a favorable ruling as to the meaning of the statute.

The construction of the statute being one of local law, we think that the recent opinion of this Court in the case of *MacGregor, Jr. v. State Mutual Life Assurance Company of Worcester, Massachusetts,* (No. 179, October Term, 1941, decided February 16, 1942), might well be adopted in the present case. There, after allowing certiorari and hearing oral arguments, this Court filed the following *per curiam* opinion:

> "Petitioner brought this action to recover the premium of a life annuity contract purchased by his decedent. The suit was begun in a state court of Michigan, but was removed, because of diversity of citizenship, to the United States District Court for the Eastern District of Michigan. Petitioner's claim is founded on the applicability of Michigan legislation regulating the conduct of insurance business in Michigan. The District Court held that 'the contract involved herein having been executed outside the State of Michigan, the

statutes of the State of Michigan relied upon by the plaintiff are not applicable.' Accordingly judgment went against petitioner. This judgment was affirmed by the Circuit Court of Appeals, 119 F. 2d 148.'

"No decision of the Supreme Court of Michigan, or of any other court of that State, construing the relevant Michigan law has been brought to our attention. In the absence of such guidance, we shall leave undisturbed the interpretation placed upon purely local law by a Michigan federal judge of long experience and by three circuit judges whose circuit includes Michigan." Affirmed.

In the present case the trial judge was for many years a lawyer of the Illinois bar, was an assistant attorney general of the State, president of the Illinois Constitutional Convention of 1920, and a member of the Federal district bench since 1929. The author of the majority opinion of the Circuit Court of Appeals likewise was an Illinois practitioner of long standing (having been admitted to the Illinois bar in 1910) and was a representative in Congress and a Federal district judge before his elevation to the Circuit Court of Appeals.

The concurring judge in the Circuit Court of Appeals, although not a member of the Illinois bar, has since 1929 been a member of the Circuit Court of Appeals of the 7th Circuit, which disposes yearly of a large number of cases arising in Illinois and which itself sits in Illinois. In fairness, it must also be said that the judge dissenting in the Circuit Court of Appeals has been judge of the Eastern District of Illinois since 1922, and had previously been a practicing attorney in Illinois since 1904. We think that the presence of a dissenting opinion does nothing more than raise a doubt as to the proper interpretation of the Illinois law which should be resolved in favor of the sovereign state as done by the other three judges

of the two courts below who held views contrary to the dissenting opinion.

We mention the personnel of the courts below who passed upon this case because of the reference in the *MacGregor* opinion to "a Michigan federal judge of long experience and by three circuit judges whose circuit includes Michigan."

We assume that this Court looks not only to the specific qualifications of the personnel of the courts below but also to the fact that they as courts dealing frequently and intimately with matters peculiarly of local law are presumed to be competent to decide such questions correctly. We felt that these considerations were relevant reasons why this Court need not grant the petition for certiorari in this case and we now feel that upon a fuller examination of the case they will be found to be good reasons for an affirmance.

We submit that in case of doubt whether certain power lies with the sovereign state or with its instrumentality, a proper regard for the relationship between the Federal courts and the sovereignty of the state dictates that such doubt be resolved in favor of the sovereign rather than in favor of its instrumentality, such as a municipality. In the absence of authoritative decision of the question by a state court, expediency requires that the doubt be resolved in favor of the sovereign rather than in favor of the creature of the sovereign. Should the decision of a doubtful question in favor of the creature be contrary to later decision of the question by a state court, the Federal court will in the interim have permitted the mere instrumentality of the sovereign to delay the carrying out of state policy. Less harm can result from a decision in favor of the sovereign than one

in favor of its instrumentality. All doubts should be resolved in favor of the unimpeded action of the sovereign state and no surrender of power by the sovereign to its instrumentality should be implied by a Federal court.

Therefore, unless the decision be too clear for argument, the question whether the power remains with the sovereign state or has been surrendered to its instrumentality ought to be decided by a Federal court in favor of the sovereign state. Of course, the petitioners here contend that the decision whether it has the power to prohibit paper milk bottles which the sovereign state has legalized is too clear for doubt. Their position would be more impressive had not both courts below held precisely contrary to the petitioners' contention.

In passing, it should be said that the attempt on the part of the petitioners to make it appear that the Circuit Court of Appeals has taken some power away from the state legislature of Illinois is entirely fallacious. Petitioners say (Brief, p. 30):

> "The boundary between the fields of state and local regulations may not be clearly defined. The decision of the Circuit Court of Appeals in effect takes away from the state legislature the power to fix the boundary and the court, in the exercise of its function to construe statutes, assumes the power itself."

The Circuit Court of Appeals did not hold that the matter was beyond the power of the legislature, but simply held that in the exercise of its power the state legislature had established a public policy for the state which prohibited the enforcement of an ordinance outlawing what the state legislature had approved. The petitioners' real complaint is not that the decision of the Circuit Court of Appeals took any power away from the legislature, but that the court wrongly construed the language of the legislature

in exercising its undoubted legislative power. The decision takes nothing from the power of the state legislature. It does take away from the city the power to defeat, by prohibiting paper milk bottles, the liberal and progressive attitude of the state toward the use under proper regulations of modern containers for milk.

The courts below properly decided that adequate protection of the sovereign power of the State of Illinois and the realization of its objectives in passing the Milk Pasteurization Act of 1939 required a holding that its creature, the City of Chicago, had not been left with the power to defeat such objectives by prohibiting the use of paper containers in the sale of milk. Such a holding does not improperly take away power from the state. It actually reinforces and protects the power of the state from impairment by judicial implication from doubtful language contained in an ambiguous statute. In this holding of the Circuit Court of Appeals we find no refusal by that court—"in effect" or otherwise—to give full recognition to the power of the state legislature.

The consideration by the petitioners of the effect of the Milk Pasteurization Act of 1939 on the power of the City of Chicago to prohibit the use of single service containers for the sale of milk is prefaced by a discussion of certain preliminary matters which we shall refer to here in the order in which they appear in petitioners' brief.

(1) In the first place, a municipal corporation, in Illinois, may exercise only such power as is conferred upon it by the state legislature. Doubt concerning the existence of a power or whether such power has been withdrawn is resolved against the municipality. The doctrine of "home-rule" has received no recognition.

The City of Chicago has no inherent power. It is a

creature of the General Assembly. To prohibit any article, it must be able to point to a state statute giving it power to do so. Furthermore, grants of power to municipalities are strictly construed. This is established by a long line of cases, has been the subject of frequent public criticism by the distinguished corporation counsel of Chicago, Mr. Barnet Hodes, but continues to be the law of Illinois, controlling in this case (*Bullman* v. *City of Chicago*, 367 Ill. 217 [1937]).

Hodes, *Law and the Modern City** (1937) says (pp. 36, 38):

> "Over and over, the Illinois Supreme Court has clung to the traditional view of all jurisdictions, and has declared: A city 'may exercise only such powers as are expressly delegated to it by the legislature and such as are necessarily implied from those expressly given.' And also: A city 'possesses no inherent power.' Time and again, cities have attempted, first by one device and then by another, to break through the barrier set up by these interpretations. But there has been little success in this direction."
>
> . . . . . .
>
> "In applying the rule of strict construction whenever cities claim the right to exercise certain powers, the courts are following a well settled principle which, as much as anything else, hamstrings municipalities. This rule, as reiterated in *Arms* v. *City of Chicago*, [314 Ill. 316] a 1924 case, is:
>
> > "'Statutes which grant powers to municipal corporations are strictly construed, and any fair or reasonable doubt of the existence of such powers is resolved against the municipality which claims the right to exercise them.'"

* The author's preface states:

"The author, of course, accepts full responsibility for the views expressed. They in no way express any official position of the law department of the City of Chicago".

The Illinois rule was stated thus in *City of Chicago* v *Murphy*, 313 Ill. 98 (1924), (at p. 101):

> "Cities may exercise only such powers as are expressly delegated to them by the legislature. The legislature is vested with all powers not taken from it by the State or Federal constitution. Many of its powers may be delegated by it to the cities created by its act. Cities are creatures of the legislature and derive their existence therefrom. They have no inherent powers. All powers of cities are derived from acts of the legislature. The fact that the legislature has the power to enact a law does not confer that power upon city councils but the same must be by legislative act conferred."

In *Consumers Co.* v. *City of Chicago*, 313 Ill. 408 (1924) the Supreme Court of Illinois has expressed the rule in the following language (pp. 411-412):

> "A municipal corporation possesses and can exercise the following powers, and no others: First, those granted in express words; second, those necessarily implied in or incident to the powers expressly granted; and third, those essential to the accomplishment of the declared objects and purposes of the corporation, —not simply convenient but indispensable. (*Huesing* v. *City of Rock Island*, 128 Ill. 465; 1 Dillon on Mun. Corp.—5th ed.—sec. 237.) Any fair or reasonable doubt concerning the existence of the power must be resolved against the municipality and the power denied. (19 R. C. L. 769; *City of Chicago* v. *M. & M. Hotel Co.*, 248 Ill. 264; *City of Chicago* v. *Pettibone*, 267 id. 573.)"

As corollaries to the rule that the powers of a municipality come from the General Assembly and are strictly construed are the rules that (1) a municipality may not exercise a power inconsistent with any Act of the General Assembly or with the public policy declared by it and (2) the power granted by the General Assembly may be

withdrawn or curtailed at the will of that body. The General Assembly may resume at any time the power previously delegated to a municipality, and this, of course, may be done by implication.

This doctrine of municipal law is also well stated by the distinguished corporation counsel of the City of Chicago in *Law and the Modern City* (Hodes, 1937, p. 44) as follows:

> "We have seen, up to this point, how two salient principles are invoked to restrict cities—the principle of express authority from the state, and the canon of strict construction against the city. Suppose a city, in its effort to control its own destiny sails by those two shoals. Is it then safe in the sea of state control? Hardly. Ahead is a rew reef.
>
> "The new peril is the principle that if the state sees fit to exercise power in its own name over an activity, the city is at once thrust out of the picture. This is the case even where the city has had jurisdiction for generations and its right to exercise the power has been heretofore firmly established. Application of this principle in Illinois has resulted in a gradual whittling away of many powers of cities, ranging in importance from control of beauty shops, to regulation of transportation lines and other utilities."

In *City of Chicago* v. *Jensen*, 331 Ill. 129 (1928), the defendant was convicted of operating a beauty parlor without a license, in violation of an ordinance of the City of Chicago. Prior to this conviction a state statute went into effect, providing for the regulation of beauty culture. On appeal, the judgment of conviction was reversed, the court pointing out that the ordinance was inconsistent with the after-enacted statute. In discussing prior decisions of the Supreme Court, and the rule of law to be drawn therefrom, the court said (p. 131):

> "This court held that while the legislature may delegate power to a municipality to grant a license

for a particular occupation and exact a license fee therefor, it may at any time take away such power and the State may resume the exercise of the power; that the legislature may repeal or amend any of the provisions of the act for the incorporation of cities and villages at pleasure, and if the provisions of the statute are inconsistent with the powers conferred on the city, the statute will operate as a repeal or amendment of the powers so conferred upon the city; that a city, as a subordinate political authority, cannot interfere with the validity or force of a license issued by the State under a statute; that the statute controls the whole subject matter.

"The statute repealed any power the city may have had to regulate and license beauty culture, the judgment convicting appellant was erroneous, and it will be reversed."

In a case well known in Illinois, *Northern Trust Co.* v. *Chicago Rys. Co.*, 318 Ill. 402 (1925), holding that the Public Utilities act of Illinois repealed by implication the power granted to cities and villages to regulate such matters as headlights on street cars, it was argued that since the ordinance requiring street cars to be equipped with brightly lighted headlights was passed prior to the enactment of the first Public Utilities act, the ordinance would not be abrogated until the Commission had taken some action under the statute inconsistent with the ordinance. The court said (p. 412):

"When the first Public Utilities act came into force, on January 1, 1914, the power of the city over the subject matter of that act ceased to exist, and it could not thereafter pass new ordinances or enforce existing ordinances with reference to matters within the exclusive jurisdiction of the Public Utilities Commission. The power to enforce proceeds from the present or existing power or authority to enact or to provide. A municipality cannot be said to possess the power to enforce an ordinance concerning a subject upon which it has lost the power to pass the ordinance.

> Any attempt to enforce in such a situation would be defeated by interposing the act withdrawing the municipality's power to enact."

In the early case of *Wilkie* v. *City of Chicago*, 188 Ill. 444 (1900), a Chicago ordinance required persons desiring to work as plumbers to obtain a license and pay an annual license fee of $30.00. Shortly thereafter the legislature of Illinois passed an act providing that persons desiring to engage in the business of plumbing should be examined as to their qualifications by a board created for that purpose and that successful applicants should receive certificates. In a suit to restrain the enforcement of the ordinance on the two-fold ground that (1) the city was without power to license the business of plumbing, and (2) even if it had such power, the ordinance was in conflict with the later statute, and hence invalid, the Supreme Court affirmed a decree restraining the enforcement of the ordinance.

After pointing out that the power of the city to license the occupation of plumbing was, at least, very doubtful, the court said (pp. 452-453):

> "While the legislature may delegate the power to municipalities to grant a license for a particular occupation and to exact a license fee, they may, at any time, take away such power or resume the exercise of it themselves. The legislature may repeal or amend any provision of the act for the incorporation of cities and villages at their pleasure, and if the provisions of the act of 1897 are inconsistent with the power claimed by the city, they will operate as a repeal or amendment of the charter to that extent. * * * By this law the legislature have prescribed the test which shall enable a person to engage in the business of plumbing, and the city, by its proviso, has prescribed another and additional test. The legislature, by the law, say he is authorized to work at his trade throughout the State if he has the required

certificate. The city of Chicago, by the proviso to the ordinance passed in pursuance of that law, says that he shall not work at his trade in that city except by paying $30 additional and receiving another license. The city, as a subordinate political authority, cannot interfere with the validity or force of the license issued by its board under the law. That these provisions are inconsistent is plain."

The force and logic of this decision is inescapable. It is clearly determinative of the invalidity of the prohibition of paper bottles which the City of Chicago seeks to enforce and thereby forbid what the superior political authority approves and permits. The majesty of the state law applies to Chicago ordinances now with the same force as it did forty years ago.

The texts on the subject of municipal legislation announce the same rule. See 2 McQuillin on Municipal Corporation, 572 (2d. ed.—1928), quoted by the Circuit Court of Appeals.

In 43 Corpus Juris, 215-217, "Municipal Corporations," the additional rule is stated that a municipal ordinance must not conflict with the public policy of the state as determined by the state legislature, thus:

> "Since a municipal corporation is a creature of the state, continuing its existence under the sovereign will and pleasure of the state, possessing such powers and such only as the state confers upon it, subject to addition or diminution of power at the state's supreme discretion, municipal regulations *must not directly or indirectly contravene the general law, nor can such regulations be repugnant to the policy of the state as declared in general legislation.*" (Italics ours.)

The Illinois cases are uniformly to the same effect.

In *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311 (1911), cited by the petitioners (Brief, pp. 12-13)

the Supreme Court passed upon the validity of Section 1160 of the Municipal Code of Chicago which then provided for a penalty of not less than $5.00 nor more than $100.00 fine for any person who sold or offered for sale any impure or adulterated food. A statute, the Pure Food Act of July 1, 1907, enacted two years after Section 1160 of the Municipal Code was passed, provided for a greater penalty. In sustaining the ordinance as valid the court said (p. 313):

> "*The laws of the state operate within the limits of municipal corporations the same as elsewhere, unless otherwise clearly provided by municipal charters or statute. Local laws and regulations are at all times subject to the paramount authority of the legislature.*" (Italics ours.)

In the last paragraph of this decision the Supreme Court used the following language which is indeed applicable to the ordinance here, saying at p. 315:

> "Municipal authorities cannot, under a general grant of power, such as article 5 of the City and Village act, *adopt ordinances which infringe the spirit of a State law or are repugnant to the policy of the State as declared by general legislation*, but the police regulations of a municipality may differ from those of the State upon the same subject, if they are not inconsistent therewith. (*McPherson* v. *Village of Chebanse*, 114 Ill. 46.) *This ordinance does not prohibit what the statute permits.* While the ordinance attaches a less penalty for its violation than does the statute, we find no repugnancy between them. The general policy under both is the same." (Italics ours.)

The pertinent language in this decision is "this ordinance does not prohibit what the statute permits." Obviously this is the test to be applied when an ordinance and state statute are to be construed.

In *City of Chicago* v. *Drogasawacz*, 256 Ill. 34 (1912) the

regulation of the bread and bakery business by ordinance was involved. The principal question was the right of the city under the state statutes to enact the bakery ordinance. The ordinance was sustained as valid, not being in conflict with the statute, and on page 37 the Court said:

> "Municipal ordinances must be in harmony with the general laws of the State (*City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311), but this ordinance does not in any way conflict with the State law."

Again, in the case of *City of Marengo* v. *Rowland*, 263 Ill. 531 (1914) the court held an ordinance of the City of Marengo requiring the closing of barber shops on Sunday invalid and again stated on page 534:

> "Municipal authorities, under general grant of power, cannot adopt ordinances *which infringe the spirit of a State law or are repugnant to the general policy of the State* (*City of Chicago* v. *Ice Cream Co.*, 252 Ill. 311; 25 Am. & Eng. Ann. Cas., 675 note; *City of Clinton* v. *Wilson*, [257 Ill. 580] *supra.*) The public policy of the State is found in its constitution and statutes, and, when they are silent, in its judicial decisions and the constant practice of its public officials." (Italics ours.)

We submit that if, as the court said in these decisions, a city cannot adopt an ordinance infringing the *spirit of a state law*, then it certainly cannot by any process of reasoning, enforce one. Since the legislature has clearly expressed the *public policy* of Illinois on health and the use of single service milk containers, such public policy is not to be rendered inoperative by ordinances or regulations of a city repugnant to it whether passed before or after such statute.

In *City of Lewistown* v. *Harrison*, 282 Ill. 461 (1918) the Illinois Supreme Court held that an ordinance which prohibited the *barter, exchange or sale* of intoxicating

liquor was authorized by the Illinois Cities and Villages Act, which gave to municipalities the power to prohibit the *sale* of such liquors. To make more definite and specific by ordinance what is provided by general legislation is not a violation of statute, but merely makes its application more certain. But if the ordinance were in conflict with the spirit of state law, with public policy or inconsistent with the language of the statute, then it would be invalid. The rule was clearly expressed by the court in the following words (p. 464):

> "A municipality may by ordinance restrict, regulate and prohibit the same acts which are punishably and penalized under the law of the State, so far as authorized so to do by law. It may make more definite regulations than are usually provided by general legislation and enforce them by appropriate penalties. It cannot, however, adopt ordinances which *infringe the spirit of a State law* or are *repugnant to the policy of the State* as declared by general legislation, but the police regulations of a city may differ from those of the State on the same subject *if not inconsistent therewith.*" (Italics ours.)

The fundamental weakness in the Chicago ordinance in question is that it prohibits (if construed as petitioners contend) what the statute *in express terms* permits. It is not an effort to fill in the details of a broad, general statute. To adopt and enforce a construction *prohibiting* the use of *single-service containers* would result in nullifying a provision of the statute, which is the paramount regulation. Legislatures are not subservient to municipalities in establishing public policy.

In construing Section 38 of the Illinois Prohibition Act and an ordinance enacted by the City of Litchfield which prohibited the manufacture and sale of intoxicating liquor, the Supreme Court of Illinois in *City of Litchfield*

v. *Thorworth*, 337 Ill. 469 (1929) pointed out that the city was bound by the definition of intoxicating liquor contained in the statute and had no authority to prohibit the sale of liquor not prohibited by the statute. At page 475 the court said:

> "Section 2 of the Prohibition Act defines the phrase 'intoxicating liquor.' It is the sale of liquor of the kind specified in the statute that is prohibited. The statute confers authority on municipal corporations to prohibit by ordinance the sale of the kind of liquor prohibited by the statute. *The municipality is bound by the definition contained in the statute and cannot prohibit the sale of liquor not prohibited by the statute.*" (Italics ours.)

It is clear beyond peradventure from the foregoing cases that the City of Chicago has no inherent power, that its power to regulate milk comes from the State, that the State has the right to take that power away before or after the enactment of the city's ordinances, that the ordinances must not be in conflict with the provisions of the State statutes, and that the city has no right to prohibit what a state statute or valid rules and regulations adopted pursuant thereto permit.

It will be well to bear in mind those general rules in considering the "saving clause" which the City relies on, namely, Section 19 of the Act. Before passing to a discussion of that question, we wish to call the Court's attention to another limitation on the power of the city shown by the case of *City of Rockford* v. *Hey*, 366 Ill. 526 (1937). In that case it was held that the City of Rockford had no power (under the same sections of the statute that the City of Chicago is relying on in the present case) to prohibit the sale in Rockford of ice cream manufactured in Sterling, Illinois, and Dixon, Illinois, by requiring a license (involving an inspection of the factories by Rock-

ford inspectors) as a condition precedent to such sale. This is the latest word of the Illinois courts on the subject. The Court said (p. 530):

> "In Illinois, a city organized under the Cities and Villages act has such powers, only, as are therein expressly delegated by the General Assembly or necessarily implied to render the grant of specific powers effective".

and (p. 531):

> "Legislative powers of municipal corporations are strictly construed, and *any rational doubt* as to the existence of power must be resolved against the municipality." (Italics ours.)

The Court then concluded (pp. 533-534):

> "In short, the issue is whether plaintiff, the City of Rockford, may require ice cream factories, located in other cities, to meet sanitary requirements prescribed by the former city in order to entitle them to Rockford licenses upon payment of the annual fee for inspection of their plants.
>
> "Municipalities have no extra-territorial jurisdiction except insofar as it is expressly or impliedly delegated by statute. (55 A. L. R. 1183; *City of Chicago* v. *Brent*, 356 Ill. 40; *Strauss* v. *Town of Pontiac*, 40 id. 301.) An inherent or implied limitation upon the city in the exercise of the powers delegated to it by the legislature is that such powers shall be exercised within the corporate boundaries of the municipalities.
>
> . . . . . .
>
> "The legislature has not delegated power to municipal corporations to pass a regulatory and license ordinance which assumes to regulate ice cream factories outside their corporate limits. The provisions which plaintiff admits extend to ice cream factories in other cities are so inseparably connected with other provisions applicable locally as to render the entire enactment void."

It is clear under this case that control of the respondent's plant at Chemung, McHenry County, Illinois, is exclusively within the jurisdiction of the Department of

Health of the State of Illinois and that the State statute (Petitioner's brief, Appendix A, p. 80) relating to pasteurized milk which provides, in part, that all pasteurized milk shall be placed in its final delivery containers at the plant, that bottling or packaging of milk shall be done at the place of pasteurization by approved mechanical equipment, and that it shall be unlawful for any person to sell or serve any pasteurized milk except in the original container in which it was placed at the point of pasteurization, contemplates the approval of the State Department of Health of respondents' operations and equipment without requiring the approval of the City of Chicago.

It is further apparent that if, after the state has approved respondent's plant and equipment for packaging milk in paper bottles, only, and has prohibited the respondent from selling its milk in any containers other than those in which it was placed at the point of pasteurization, the City of Chicago is permitted to stop that milk at its city limits and forbid its sale, the city is thereby permitted to exercise indirectly an extra-territorial power over the respondent's plant and equipment which the *Hey* case expressly forbids. The City of Rockford was therein denied power to prohibit, by an inspection requirement, *the sale in Rockford* of ice cream made elsewhere.

It is important to notice this geographical division of authority between the State of Illinois and the City of Chicago, because the sole reliance of the City of Chicago for its power is on cases like *Koy* v. *City of Chicago*, 263 Ill. 122; *City of Chicago* v. *Bowman Dairy Co.*, 234 Ill. 294, and *City of Chicago* v. *Union Ice Cream Co.*, 252 Ill. 311, where the pasteurizing or manufacturing plant was located within the confines of the City of Chicago.

(2) It is true, as the petitioners contend (Brief, p. 12),

that there is no constitutional objection to regulation of the same subject by statute and ordinance. Aside from the constitutional question this rule is subject to the qualification that the ordinance must be in harmony with the statute and with state policy; in the event of conflict or inconsistency the ordinance must give way. This qualification of the rule is elaborated in *City of Chicago* v. *Union Ice Cream Co.*, 252 Ill. 311 (1911), from which both the petitioners and we have quoted.

(3) On the question of the powers of municipalities [Petitioners' Brief, pp. 13-17], in Illinois, to regulate the sale and distribution of milk, it should be added that such regulation must be reasonable and that whether a particular regulation is or is not reasonable is a judicial question. In *Koy* v. *City of Chicago*, 263 Ill. 122 (1914), from which the defendants have quoted extensively the Court said (p. 127):

> "When the legislature has authorized a city council to pass ordinances upon any subject, the power thus conferred must be reasonably exercised. Whether its exercise in a particular case is reasonable is a judicial question, and an unreasonable ordinance will be held void by the courts."

In *City of Chicago* v. *C. & N. W. Ry. Co.*, 275 Ill. 30 (1916), the court, in holding unreasonable and therefore invalid, a section of the milk ordinance of the City of Chicago, said (p. 38):

> "The city council has authority to pass ordinances regulating this question, and the question of regulation, in the first instance, rests with the municipal authorities, but whether its exercise in a particular case is reasonable is a judicial question. There must be some logical connection between the object sought to be accomplished by such an ordinance and the means prescribed to accomplish the end. An unreasonable ordinance will be held void by the Courts." (Citing cases.)

We emphasize at this point, the necessity that an ordinance be reasonable. Whether the particular ordinance now in question is a reasonable exercise by the City of its power to regulate certain aspects of the milk industry in the interest of the public health is a matter we discuss elsewhere in detail (Points II and III, *infra*). The assertion of the city that it had power "to regulate every detail of the milk industry" (Brief, p. 15) prior to the enactment of the Milk Pasteurization Act, and that it had power to prohibit the use of single service containers, is an assumption which this suit was originally brought to challenge.

(4) The assertion (Petitioners' Brief, pp. 16-17) that the ordinance required the use of glass containers—under the construction placed by the Circuit Court of Appeals on the phrase "standard milk bottles"—is treated fully under Point IV and the applicable rule of law is discussed. It is sufficient here to point out that under a more recent decision of the Supreme Court of Illinois than that cited to and relied on by the Circuit Court of Appeals the meaning of legislative language is not static. The fact, therefore, that single service containers were not in general use on January 4, 1935,—the date of the enactment of the ordinance—and consequently were not considered by the City Council at that date as being "standard milk bottles" does not preclude such containers from being within the meaning of that phrase in interpreting the ordinance today. We submit that the correct interpretation of the ordinance was adopted by the District Court which found single service containers to be "standard milk bottles".

Effect of the 1939 Statute on the Powers of Cities.

After pointing out that Section 19 of the Milk Pasteurization Law of 1939, is in the same language as the title of the A[illegible], the petitioners develop in detail their contention that, by reason of that section, "whatever aspects of the milk industry may be subjected to statewide regulation by the statute, cities and villages retain to the fullest extent every power that they had theretofore" (Petitioners' Brief, p. 19). This result is said to be revealed by a "cursory reading of the saving clause" and "a detailed exposition of the language of the section leaves no possible doubt" (Brief, p. 19).

Before discussing the analysis or exposition of this section of the Milk Pasteurization Act of 1939, and its effect on the regulatory powers of the City of Chicago over certain phases of the milk industry, that Act must be considered in relation to previous legislation on the same subject.

In 1925 the General Assembly enacted "An Act in relation to the pasteurization of milk." (Smith-Hurd Ill. R. S., 1925, c. 56½, pars. 101-113.) In 1935, this Act was amended. (Ill. R. S. 1937, c. 56½, pars. 101-114). As amended it was in force until the enactment of the present statute, Section 20 of which provides:

> "The Act entitled 'An Act in relation to the pasteurization of milk', approved June 30, 1925, as amended June 29, 1935, is hereby repealed."

The earlier Act provided for application to, and issuance by, the State Department of Public Health, of a Certificate of Approval to persons or firms engaged in operating a pasteurization plant who comply with the provisions of the Act. The Act imposed certain requirements with respect to the construction of such plants, for

certain apparatus for recording temperatures during pasteurization and for filter tests for sediment or stain. In addition, employees in pasteurization plants were required to furnish annually to the State Department of Health a medical certificate showing them to be free of certain specified diseases, and provision was made for an "automobile laboratory" to enable the Department of Health to make chemical and other scientific analyses. Upon failure to comply with the requirements of the statute, provision was made for revocation of the certificate of approval, and a penalty was fixed for violation thereof.

In 1939 the legislature enacted the present Milk Pasteurization Act. The two Acts cover the same subject matter, but in the present statute each provision is treated with an elaboration not present in the earlier Act. New requirements are added and the old made more stringent.

There is, moreover, another major difference in the Acts. What might be characterized as a "saving clause" in the old Act, but which it would perhaps be more accurate to describe as an "exception," provides:

> "The provisions of this Act do not apply to pasteurization plants located in and furnishing milk or milk products for consumption in municipalities containing 500,000 or more inhabitants, according to the last census, which have established a system of regulation and inspection of the pasteurization plants supplying milk for consumption in such municipalities or to any pasteurization plant which supplies milk or milk products solely for consumption in such municipalities." (Ill. R. S. 1937, C. 56½, "Foods", par. 113.)

The evident purpose of this section was to exclude the City of Chicago from the operation of the statute, since no municipality in Illinois, then or now, except Chicago,

satisfied the population requirement. Obviously, the legislature, in 1925, in first entering this field, was satisfied that the pasteurization regulations then in effect in Chicago were not inadequate, though even at that date it is noteworthy that the scope of the exception was confined to plants supplying products solely for consumption in that City.

The Milk Pasteurization Act of 1925 was the first attempt by the State of Illinois to regulate the distribution and pasteurization of milk. It was neither comprehensive nor exhaustive and did not cover the field in detail. The City of Chicago, alone of the municipalities in the State, by the device of population classification, was excluded from the operation of the statute. The present statute, which repealed the Act of 1925, makes standards more stringent. Additional requirements extend the scope of prior regulations. The utmost care is taken to include all important details with reference to the sale and distribution, as well as the pasteurization, of milk and to give the State Director of Health power to supplement the requirements. The application of this Act is statewide. No municipality is exempted. It is immaterial that a city or village may or may not have established a system of regulation and inspection. No longer does the City of Chicago have the exemption provided by the 1925 statute.

The intention of the legislature that the Act is to be effective throughout the state without territorial or other limitation is apparent from the language of the statute (sec. 2):

> "*Any person* operating a pasteurization plant who distributes, delivers or sells pasteurized milk or pasteurized milk products for consumption *in the State of Illinois* shall annually make application to

the Department for a Certificate of Approval." (Italics ours.)

Section 3 provides:

> "*Any person* who shall hereafter engage in operating a pasteurization plant for the purpose of distributing, delivering, or selling pasteurized milk or pasteurized milk products for consumption *in the State of Illinois*, shall before engaging in such business make application to the Department for a Certificate of Approval." (Italics ours.)

Section 9 states:

> "Any person selling, delivering or distributing milk or milk products *in the State of Illinois* who shall heat milk or milk products or subject milk or milk products to other treatment in an effort to make the milk or milk products safe for human consumption or to preserve its keeping qualities shall comply with the provisions of this Act." (Italics ours.)

Section 11 provides:

> "No milk or milk products sold, distributed or delivered *in this State* shall be heated or subjected to any other treatment in an effort to make it safe for human consumption or to preserve its keeping qualities *unless such milk or milk products are processed in compliance with the provisions of this Act.*" (Italics ours.)

Other sections of the act indicate a recognition of single-service containers and show that the state has assumed control of the equipment for the packaging of milk and prohibited its sale except in containers filled on such equipment at the point of pasteurization.

Section 8 provides:

> "All pasteurized milk and milk products shall be placed in their final delivery containers in the plant in which they are pasteurized. *It shall be unlawful*

for hotels, soda fountains, restaurants, grocery stores, milk depots, milk stations and similar establishments to sell or serve any pasteurized milk or milk products except in the original container in which it was placed at the point of pasteurization, provided that this requirement shall not apply to milk or milk products consumed on the premises which may be served from the original container or from a dispenser approved by the Department for such service. The sale or distribution of bulk, loose or dipped pasteurized milk or milk which has been heated within the purview of this Act is hereby prohibited."

The first paragraph of Section 15 is as follows:

"Any pasteurization plant coming under the provisions of this Act shall conform with all of the following items of construction; equipment, maintenance and operation *and in accordance with minimum requirements adopted by the Director for interpretation* and enforcement of this Act." (Italics ours.)

Following and as an integral part of this section are certain items, including the following:

"Item 10. All multi-use containers and equipment with which milk or milk products come in contact shall be constructed in such manner as to be easily cleaned and shall be kept in good repair. *Single service containers,* caps, gaskets and similar articles *shall be* manufactured and transported in a sanitary manner." (Italics ours.)

"Item 18. *Bottling or packaging of milk and milk products shall be done at the place of pasteurization by approved mechanical equipment.*" (Italics ours.)

Pursuant to the power therein granted, the Director of the Illinois Department of Public Health has promulgated "minimum requirements" for interpretation and enforcement of this Act, providing, in part, as follows:

"Satisfactory compliance.—This item shall be deemed to have been satisfied if: * * *

(5) All *single-service containers,* caps, gaskets and

similar articles are manufactured and handled in accordance with requirements of the Department.

(a) The buildings and rooms in which *single-service containers* and container caps and covers are manufactured, packed, stored, and handled shall be clean, well lighted and ventilated, and free of dust and flies, as prescribed in items 1, 2, 3, 4, 6, 7, 8 and 11.

(b) The average bacterial plate count of the stock from which *single-service containers* and container caps and covers are made shall not exceed 100 colonies per gram. No substance shall be present in finished single-service containers and container caps and covers which is toxic.

(c) All operations of the fabrication plant and during transportation of the manufactured articles shall be so conducted as to reduce to a minimum the possibility of contaminating the manufactured articles, as prescribed in items 13, 14 and 15.

* * * * *

(e) All *single-service containers* and container caps and covers shall be so treated *as to be as impervious to milk* and milk products as practicable." (Italics ours.)

Section 16 of the statute is in part as follows:

"The Department may either refuse to issue, or may refuse to renew, or may suspend, or may revoke any certificate of Approval because of the violation of any of the provisions of this Act or for any of the following causes:

(a) Insanitary conditions of plant surroundings within the control of the plant management, insanitary methods of handling milk, milk products or *milk containers or equipment.*

(b) Employment of careless, indifferent and inefficient personnel.

(c) Violation of any of the provisions of this Act or of the minimum requirements for interpretation and enforcement of the Act.

(d) Failure to display Certificate of Approval to the public at all times when such Certificate of Approval has been issued as provided in this Act.

(e) Displaying to the public any Certificate of Approval which has been suspended or revoked or which has expired. * * *" (*Italics ours.*)

We shall refer below to the effect to be given to Section 19 of the Act, relied upon by the City (pp. 17 to 23) as preserving its right to prohibit paper bottles which the sovereign state permits.

Another statute should be noticed, the statute (Ill. Rev. Stats. 1939, c. 111½, "Public Health", par. 22) establishing the State Board of Health, whose duties are now transferred to the Illinois Department of Health by Illinois Revised Statutes, 1941, c. 127, "State Government", par. 55. The Public Health Statute provides in part:

"Sec. 2. The State Board of Health shall have the general supervision of the interests of the health and lives of the people of the state. * * *

The Board shall have authority to make such rules and regulations * * * as they may from time to time deem necessary for the preservation and improvement of the public health, * * *

It shall be the duty of all local boards of health, health authorities and officers, * * * of the State or any * * * city * * * thereof to enforce the rules and regulations that may be adopted by the State Board of Health * * *."

It will be noticed that under the terms of the above Acts the State of Illinois, as it has the undoubted right to do, has taken unto itself the approval of not only the plant but also the equipment and methods of operation of every person who pasteurizes milk for sale in the State of Illinois. It also has occupied the following fields of milk sanitation: It requires that the "bottling or

packaging" of milk shall be done at the place of pasteurization. It requires that all pasteurized milk shall be placed in final delivery containers in the plant in which it is pasteurized. It makes it unlawful for any person in the state to sell or serve any pasteurized milk except in the original container in which it was placed at the point of pasteurization.

The State of Illinois has recognized expressly, both by the Milk Pasteurization Statute and by the lawful requirements made pursuant to it, that single-service containers (as paper milk bottles are now known), when kept as provided by the requirements and when "so treated as to be as impervious to milk and milk products as practicable" are entirely proper containers for the sale of pasteurized milk throughout the State of Illinois. There is not one phrase or word in the statute mentioning the words "standard milk bottles", but rather the entire statute is broad and uses the words "multi-use containers", "single-service containers", "container caps and covers", and "fabrication plant".

It is apparent that the legislature recognized and approved the use of single-service containers and that any construction of the ordinance in question which prohibits them is contrary to the spirit of the state statute and of the public policy it establishes.

It is contended by petitioners that the purpose of this statute is to "prescribe minimum sanitary standards" and to place "a floor under municipal milk regulations", with the result that a municipality may "impose higher standards than those imposed by the statute" (Brief, p. 22). The power thus reserved to municipalities is, petitioners argue, subject only to the limitation "that the municipal regulations must not fall below the minimum standards fixed by the state". (Brief, p. 22).

Petitioners contended in their petition for certiorari that the purpose of the saving clause was to provide state regulation in "many municipalities so small that their officers are unable to adopt and enforce adequate regulations of the milk industry" (Petition, p. 27). In their reply to our answer they claimed that this language of theirs had been misunderstood and that really "defendants' contention is that the statute is designed to prescribe minimum sanitary standards which are effective throughout the state, both in rural and urban communities". (Reply to answer to petition for certiorari, p. 11.) The latter idea is repeated in the petitioners' latest effort (Brief, p. 22) and the following comment is added:

> "The statute thus places a floor under municipal milk regulations."

If this were the legislative intention, it seems strange that language to that purpose was not used in the present saving clause. That the Illinois legislature knows how to use such language is apparent from the 1941 act in relation to Grade A Milk and Grade A Milk Products, approved July 11, 1941 (1 Ill. Session Laws, 1941, p. 809; Ill. R. S., 1941, c. 56½, "Foods", paras. 152-169) of which section 18 (Ill. R. S., 1941, c. 56½, para. 169) states:

> "Nothing in this Act shall impair or abridge the power of any city, village or incorporated town to regulate the production, handling, storage, distribution, sale or delivery of milk or milk products, *provided the minimum requirements under this Act are observed.*" (Italics ours.)

Furthermore, in the 1939 Act itself, the legislature used words which would have been appropriate to express the petitioners' present construction of the saving clause when in section 15 (Petitioners' Brief, p. 84) it referred to

"minimum requirements adopted by the Director for interpretation and enforcement of this Act".

The petitioners' contention that the statute simply places "a floor" under the city ordinance is reached by a novel method of interpretation. Because Section 15 of the Act provides that the construction, equipment, maintenance and operation of pasteurization plants shall conform with the requirements of said section and, in addition, be "in accordance with minimum requirements adopted by the Director for *interpretation and enforcement* of this Act," it is concluded that further requirements may be imposed by some agency other than the State and that this agency could only be a city or a village (Brief, pp. 21-22). If such were the intention of the General Assembly it would seem that appropriate language to accomplish that result would have been employed. In fact, however, the language itself negatives such interpretation. "Minimum requirements" is defined in Section 1 (h) as "the code formulated *by the Director for interpretation and enforcement* of this Act."

The language of the statute thus far shows no intention to permit cities and villages to occupy the same field of regulation as the state, in the sense that an ordinance of such municipality may "prohibit what the statute permits," or impose different and inconsistent requirements from those enumerated in the statute. If cities and villages may "make further and more definite regulations" (in the language of *City of Chicago* v. *Union Ice Cream Company*, 252 Ill. 311, *supra*) such regulations must "not prohibit what the statute permits", a condition laid down by the Supreme Court of Illinois in that case which qualifies and circumscribes municipal action in such instances. The power of the City of Chicago to regulate the sale and distribution of milk is conditioned by the

limitation that it shall "not prohibit what the statute permits."

The contention (Petitioners' Brief, p. 21) that there is no conflict between the ordinance which "prohibits" the use of single service containers and the statute which permits and "regulates" their use is without merit.

It is the contention of the petitioners now as it was in the trial court, that their right to prohibit paper bottles is preserved by Section 19 of the 1939 Milk Act (Ill. R. S. 1939, c. 56½, para. 133):

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk, and pasteurized milk products, provided such regulation [does] not permit any person to violate any of the provisions of this act."

The word "does" is not a part of the act as passed, but may fairly be implied.

We turn now to consideration of the effect of this section. We have seen that prior to 1939 the sale and distribution of pasteurized milk in Illinois was regulated by statute. By express provision of that statute the City of Chicago was excepted from compliance with its requirements. The sale and distribution of pasteurized milk in all other cities and villages in Illinois was, however, controlled by the State. In 1939 the earlier statute was supplanted by the present Milk Pasteurization Act. A comparison reveals that the later Act is, in reality, an exhaustive and comprehensive revision of the earlier Act, remedying certain omissions and regulating in detail the entire field of milk distribution. By the new Act the City of Chicago is placed on the same plane as other Illinois municipalities.

The office of a saving clause is to preserve from destruction some special thing out of the general things mentioned in the statute. *Crawford on Statutory Construction*, page 612 (1940); 2 *Lewis' Sutherland on Statutory Construction*, 678 (1904). Since its function is not to repeal the main provisions of the Act, no saving clause should be so construed as to destroy those provisions. Yet the contention of the petitioners that municipalities may forbid what the statute permits is to render the Act *inoperative* to that extent. If the City of Chicago may prohibit the use of single service containers which are expressly sanctioned by the statute, is there any reason why it may not "in a desire to exercise the utmost vigilance" require a different method in the pasteurization of milk although Section 11 of the Act specifically provides that no milk sold or delivered in the State of Illinois shall be subjected *to any other treatment* to make it safe for human consumption than the processing provided by the Act? And if the City of Chicago may forbid the use of single service containers for the sale and delivery of milk within the municipal confines, is there any reason why it should not require additional or different methods of operation in pasteurization plants within the territorial limits of such city, although Section 4 of the statute provides that upon compliance with the provisions of the Act the Director shall issue a Certificate of Approval to persons applying therefor? And if it may impose such additional requirements, is not such Certificate of Approval rendered ineffective?

One difficulty with the City's argument that the statute establishes "minimum requirements" is in answering the question: Who determines whether a requirement is a minimum or a maximum? Is the City's judgment on that question to prevail against the State's?

It is clear that the only effect to be given to Section 19 is, first, that it prevents a repeal by implication of all power of the municipality to regulate milk, and, second, that the city's power continues unimpaired as to all of those numerous matters not governed by the statute or by the minimum requirements promulgated pursuant thereto. It gives the City no right to enforce ordinances in conflict with the statute or the regulations made thereunder.

That this is true is apparent from the proviso to Section 19, which expressly prohibits any city, village or incorporated town from permitting "any person to violate any of the provisions of this Act." To violate is "to infringe on", "to disturb", "to disregard". If a municipality may not permit any person "to infringe on, or to disturb, or to disregard" any provision of the Act, such municipality may not *itself* "infringe on, or disturb, or disregard" any provision of the Act. But to forbid the use of single service containers, the use of which is expressly sanctioned by the statute, is "to infringe on or to disturb or to disregard" the plain language of the statute.

Petitioners place great reliance upon *City of Ottawa* v. *Brown*, 372 Ill. 468 (1939), which involved the following saving clause in "An Act to regulate the Storage, Transportation, Sale and Use of Gasoline and Volatile Oils", in force July 1, 1919 (Ill. Session Laws, 1919, p. 692; Hurd's Illinois R. S. 1919, c. 38, Criminal Code, par. 54q).

> "Except in cities or villages where regulatory ordinances upon the subject are in full force and effect, the Department of Trade and Commerce shall have power to make and adopt reasonable rules and regulations governing the keeping, storage, transportation, sale or use of gasoline and volatile oils."

The petitioners point out that in this decision the Supreme Court of Illinois held that a municipality in which, on July 1, 1919, regulatory ordinances on the subject were in force, had the power to amend its ordinance later without regard to any conflict between city and state regulation.

The important thing about the saving clause in this statute is not that it was given the effect shown in *City of Ottawa* v. *Brown*, but that the Supreme Court in a previous case gave to the saving clause a narrow construction which withdrew all the power to regulate the subject matter involved from all municipalities except those which *at the effective date of the act* had ordinances in force dealing with such subject matter. The previous case was *Kizer* v. *City of Mattoon*, 332 Ill. 545 (1928), where the court had before it the validity of an ordinance of the City of Mattoon enacted after July 1, 1919, purporting to regulate the keeping, storage, sale, etc., of gasoline. Plaintiffs sought an injunction against the enforcement of the ordinance and losing in the trial court were appellants in the Supreme Court of Illinois. There the plaintiffs contended that the legislature had taken the power of regulation from cities by the act of July 1, 1919, and the defendants contended that under clause 65 of Section 1, Article 5, of the Cities and Villages Act enacted in 1874 (which is the act relied on by the City of Chicago here), the City of Mattoon had the power to enact and enforce the ordinance. The City of Mattoon contended that the act of 1919 did not repeal its power under clause 65 and "that there is not such clear repugnancy between the provisions of these laws that they cannot all be carried into effect". The court said (pp. 549-550):

"The power to pass ordinances such as the one

here in question was delegated to cities by the State through its legislature. Where the State delegates such power to a municipality it may resume it through legislative action and thus deprive the municipality of the right to exercise it. (*City of Chicago* v. *Phoenix Ins. Co.*, 126 Ill. 276; *Wilkie* v. *City of Chicago*, 188 *id.* 444.) Prior to July 1, 1919, the exclusive power of regulation here involved was lodged in cities and villages by virtue of clause 65 above quoted. By its act to regulate the storage, transportation, sale and use of gasoline and other volatile oils, in force July 1, 1919, the State withdrew from municipalities this exclusive power of regulation and gave to the Department of Trade and Commerce exclusive power to make and adopt reasonable rules and regulations governing the keeping, storage, transportation, sale or use of gasoline and volatile oils, except in cities or villages where regulatory ordinances upon the subject were in full force and effect. * * * The City of Mattoon on July 1, 1919, not having in full force and effect regulatory ordinances on the subject, its delegated power to enact such ordinances was automatically withdrawn by the State and the exclusive power to make such regulations for the City of Mattoon became vested in the Department of Trade and Commerce. The City of Mattoon having been divested of this power by the State, could not by its own action re-acquire such power, but could only regain it by subsequent action on the part of the legislature."

It will be noticed that in the above case the court construed the words "regulatory ordinances upon the subject are in full force and effect" as meaning in effect on July 1, 1919, when the act became effective. A logical construction of such language would require the words "are in full force and effect" to mean "are in full force from time to time". Logically there is no reason for giving greater force and effect to an ordinance in force on July 1, 1919, than one enacted on July 2, 1919. The

fact is that a later ordinance would probably be a better informed effort than an earlier one. Notwithstanding the apparent logic of this consideration, the Illinois Supreme Court gave the ordinance the strictest possible construction in favor of state regulation—in favor of withdrawing from municipalities power which they had had under the general Cities and Villages Act upon which the petitioners in this case place their complete reliance.

Other courts have given saving clauses a narrow construction.

In *State ex rel. Knise et al.* v. *Kinsey*, 314 Mo. 80, 282 S. W. 437 (1925), an original petition for mandamus was filed in the Supreme Court of Missouri to compel the Board of Public Service of the City of St. Louis to issue permits to the relators to sell milk in that city. An ordinance of the city forbade the sale of "raw" or unpasteurized milk within the confines of the municipality.

The State Legislature had also by statute classified and defined various types of milk and milk products and established standards of purity for such dairy products. "Raw" or unpasteurized milk was one of the types of milk thus defined by the statute.

In contending that there was no conflict between the ordinance which prohibited the sale of unpasteurized milk, and the statute which recognized raw milk as a lawful product, the City of St. Louis placed great reliance on Section 8646 of the Missouri statutes which provided:

> "All cities and towns in the state shall have power, by ordinance, to license and regulate milk dairies and the sale of milk, and provide for the inspection thereof."

The relators contended that since "raw" or unpasteurized milk was declared by statute a lawful product

that the City of St. Louis was without power to prohibit its sale, and that the ordinance purporting so to do was void. The Court agreed with this contention and said (pp. 438-439 of 282 S. W.):

". . . This statute shows a very comprehensive plan in defining and specifying different milk products which it may be lawful for persons to deal in. Section 8646, quoted above, relating to cities, of course only authorized such cities to provide for inspection, licenses, and regulations so as to secure conformity to the general statute. The city may enforce such regulations as are reasonable in requiring milk dealers to comply with the law.

"A city has ample power by police regulation to protect the health of its inhabitants, but a municipal police regulation cannot infringe on rights guaranteed by the Constitution or laws of the state. A municipality cannot lawfully forbid what the Legislature has expressly authorized (citing authorities) . . .

"Here clause 1 of the statute of section 11985 defines milk. It is required to be fresh, clean, and come from healthy cows, properly fed and kept. It is not denied that the product so produced and kept is wholesome. . . . It is apparent that the statute has made several classes of milk products, of which raw milk is one and pasteurized milk another. The ordinance under consideration forbids anyone to deal in raw milk, a product which the Legislature authorizes as a lawful product and which admittedly is healthful and harmless. It cannot be contended that pasteurized milk is the milk described in clause 1 of the section, because it is subjected to a process which gives it a different character. Therefore, under the rule of law as stated above, on the face of the ordinance and the statutes, the city had no authority to forbid the dealing in raw milk, and could not lawfully refuse permits to milkmen to sell it. . . . Here is a lawful product, made so by the statute of the state, and the ordinance purports to forbid a citizen his constitutional right to deal in that lawful and harmless product. This does not mean that the city may not make regulations which the statute does

not impose, conditions which insure the purity of the product. The city may require standards of *quality* in the milk dealt in, where the statute makes none. One may violate an ordinance without violating a statute. But the ordinance here is not limited to those regulations. It definitely and distinctly forbids anyone to deal in a product which the statute declares to be lawful."

The petition for mandamus was allowed.

A Connecticut case also shows the extent to which the power of the state over regulation of milk supersedes municipal action.

In *Shelton* v. *City of Shelton;* 111 Conn. 433, 150 Atl. 811 (1930), the plaintiff was a licensed milk dealer doing business in the City of Shelton. The plaintiff had complied with the laws of the state, the rules and regulations of the state milk regulation board and the ordinances of Shelton concerning the production, handling and sale of milk, except one ordinance of that city which provided, in effect, that no milk or cream should be sold at retail within the confines of the municipality unless it had been pasteurized or produced from tuberculin-tested cows.

The charter of Shelton empowered the city to adopt ordinances

> "to license milk dealers and to regulate the sale and manner of distribution of milk and to prohibit the sale thereof, unless in accordance with such regulations."

The city was further authorized, in the same section of the charter, to adopt ordinances with reference to foods

> "and to prohibit the sale thereof when in such condition as to endanger the public health."

Subsequent to the incorporation of the defendant municipality, the General Assembly of Connecticut enacted certain legislation concerning the inspection of dairies and the production, care, handling, marketing and sale of milk and cream and gave the milk regulation board power to make rules and regulations concerning the marketing or sale of milk or cream within the state "to protect the public from the use of milk and cream which is unsanitary or detrimental to public health." The statute recognized five types of milk and made all five lawful provided the statutory regulations were complied with in their production and sale. In addition to pasteurized milk and milk from tuberculin-tested cows, the statute defined and recognized raw milk, grade A milk and certified milk.

A "saving-clause" in the Act provided:

> "No provisions of sections 2485 to 2492 inclusive shall affect the authority of any town, city or borough to enact ordinances or by-laws for the control, regulation, sale or distribution, within its limits, of milk which may be detrimental to public health."

The Supreme Court of Errors of Connecticut, despite the saving clause, found that the ordinance, in forbidding the sale of raw milk, grade A milk and certified milk, each of which was recognized by the statute as a lawful product, was in conflict with the statute and for that reason void. The court, after pointing out that ordinances must not conflict with statutes and must be in harmony with the general law of the state and with its public policy as expressed in its legislation, said (p. 815 of 150 Atl.):

> "Obviously there is nothing in section 2491 [the 'saving clause'] or in section 1 of Chapter 272 of Public Acts of 1929 which gives the city of Shelton the right to prohibit the sale of milk or cream unless it be produced from tuberculin-tested cows or

pasteurized. There is nothing in the section which grants to this city the right to prohibit the sale of raw milk which meets the statutory qualifications, by a producer or dealer who has complied with every provision of the law."

And continuing the court said (p. 816 of 150 Atl.):

" . . . The ordinance converts the permissive use of tuberculin-tested milk or pasteurized milk of the statute into a compulsory one. It prohibits absolutely the sale and hence the use of raw milk, whose use and sale the statute grants conditioned upon compliance with the statutory requirements. The ordinance repeals this statutory grant within the limits of this city. The passage of this ordinance was beyond the powers granted this city.

"The statutes as amended have covered the field of milk legislation, at least so far as the General Assembly purposed, up to the time of the passage of this ordinance. The subject-matter is not an exclusively local condition. To the extent the state legislation has gone, it has pre-empted the field. The defendant under its general grant in section 66 can aid the purposes of this legislation. It cannot override it. It cannot prohibit what the statute grants. It cannot set up new standards in place of the legislative standards. It cannot substitute its judgment for the legislative judgment. It cannot overturn a public policy evidenced in long-continued legislation over a subject state wide in its range and not only intended to conserve the health of people but certainly doing it. . . .

"The statute law recognizes at least five kinds of milk and makes all five lawful provided the statutory provisions are complied with in their production and sale, viz: Raw milk, tuberculin-tested milk, pasteurized milk, grade A milk, and certified milk. The city of Shelton was without power to enact an ordinance prohibiting the sale at retail of any one of these kinds of milk which are authorized by statute. Whether the city could in the exercise of its police power add to these regulatory provisions we have no need to inquire."

The interpretation of the "saving clause" of the Illinois statute by the petitioners is subject to the criticism that it would lead to an unseemly conflict of jurisdiction between the State and the City.

The Illinois Pasteurization Act cannot mean that specific matters shall be subject to determination by both the state and by the city at one and the same time. That would mean chaos in regulation which is not to be attributed to the intention of the legislature and which can be avoided by holding that the City's power is withdrawn by implication in the field actually occupied by the State of Illinois.

In *Village of Atwood* v. *Cincinnati, Indianapolis & W. R. Co.*, 316 Ill. 425 (1925), the question was whether the Public Utilities Act of Illinois repealed by implication the power long before granted to municipalities to require watchmen at railway crossings. The Illinois Supreme Court recognized the rule that "the police power is an attribute of sovereignty and is primarily vested in the General Assembly, which has the right at any time to recall it from the agency to which it has been delegated, and after being recalled to retain it or to confer it upon some other agency or government." (p. 433.)

After finding (p. 430) that the Public Utilities Act gave the Commission the power to require railroads to station flagman at grade crossings, the court held (p. 431):

> "If both the commission and the village authorities can exercise the power, their requirements with reference to the same crossing may be utterly contradictory, for the village board may direct the stationing of a flagman while the commission may order a separation of grades. Obviously, in such cases both cannot be obeyed, and concurrent authority often leads to conflict and results in confusion. The Pub-

lic Utilities act enjoins obedience to the commission's orders. That act is the later one and covers the whole subject of promoting the safety of the public at the intersections of streets and railroads. It is complete in itself and evidently was intended by the General Assembly to supersede the power conferred by subsection 27 of section 1 of article 5 of the general Cities and Villages act to require railroad companies to keep flagmen at street crossings."

The court held that the Public Utilities Act and the power of the village were so clearly inconsistent that both could not stand and that therefore the power of the village was withdrawn and transferred to the Commerce Commission.

It is true that the question in that case was whether there was a repeal by implication of the powers granted to municipalities but what the court said about the conflict of concurrent jurisdiction and about the desirability of avoiding such conflict is very appropriate to the case at bar. The city has argued, and properly so, that Section 19 of the Milk Act is a saving clause not present in the Public Utilities Act. We concede that except to the extent that the state by and pursuant to the 1939 Milk Act occupies the field of milk regulation, the powers of the City of Chicago are unimpaired.

Again, in *Northern Trust Co.* v. *Chicago Rys. Co.*, 318 Ill. 402 (1925), already referred to, where the question was whether the City of Chicago retained its power to require street cars to maintain brightly lighted headlights, the court said (p. 410):

"Did the Public Utilities Act of 1913, which conferred this ample control and supervision over public utilities, including street railroads, deprive municipalities organized under the general Cities and Villages act of the power to pass ordinances requiring street railroads to equip their cars with brightly

> lighted headlights? If both the commission and the city could exercise the same power at the same time with reference to the same subject matter their requirements in respect to the same utility might be utterly contradictory. In such cases the utility could not obey both the commission and the city council. Yet the Public Utilities act enjoined obedience to the commission's orders and prescribed severe penalties for failures to comply. Obviously, concurrent authority would lead to conflict and confusion."

Here, again, the question was whether the conflict between the Cities and Villages Act and the Public Utilities Act was so complete as to indicate that the latter had repealed the former, but the reasoning of the court supports our contention that where the legislature has withdrawn a portion of the city's power and conferred it on a new agency (in our case, the Director of the Department of Health of the State of Illinois) at least to the extent of any conflict between the state and municipal authorities the state governs.

The question may be asked why Section 19 was inserted if conflicts between the State Department of Health and municipalities are to be decided in favor of the state authority. We believe that we have already properly stated the purposes of Section 19, that it was intended to prevent a repeal of all municipal power by implication and to indicate that the Milk Act should supersede the power of municipalities only to the extent that the state had entered the field of milk regulation.

Petitioners contend (Brief, pp. 29-30) that if there is need for both city and state regulations there are *bound to be differences* between them. They instance the failure of the state statute to *require* the date on which the milk is to be sold to be placed on the label. They argue from this that the statute permits the use of undated containers

and *approves* their use so that if our contention be correct the city ordinance prohibiting the use of undated containers is invalid. We make no such contention and the petitioners' argument shows an unwillingness on their part to admit that there is a clear distinction between *supplemental regulations* and *prohibitions*. There is nothing *inconsistent* between the requirement of the state statute that the word "pasteurized" and the name and postoffice address of the pasteurization plant be placed on the label and the city requirement that the permit number of the Chicago Board of Health and the last date on which the contents are to be sold shall be placed on the label (R. 37).

What is actually done is that the information required by both the statute and the ordinance is placed on the label and there is nothing whatever inconsistent in the two requirements. The example given by the petitioners is not comparable to the situation here in which petitioners attempt to prohibit what the state statute recognizes and permits. An analogous instance would occur, however, if the city attempted to forbid the placing of the postoffice address of the pasteurization plant on the label by prescribing a different form of label and making it exclusive.

The failure of the state statute to require that containers be dated is neither an express nor implied approval of undated containers. The references in the statute to single service containers are, however, a definite recognition and approval of them. Furthermore, the grant of power to the Director of Public Health of the state to approve the mechanical equipment for the packaging of milk (Section 15, Item 18 of the 1939 Pasteurization Act, Petitioners' Brief, p. 86) and the Director's specific approval, as agent of the state legislature, of the

plaintiff's equipment for the packaging of milk in single-service containers makes the prohibitory ordinance of Chicago not simply regulatory or supplementary to the state action, but directly in conflict with it.

The Circuit Court of Appeals correctly held:

> "Neither do we agree with defendants' argument that the prohibition of plaintiff's single service container is a mere regulation."

As part of the record in the present case there has been printed (R. 23-122) the milk ordinance of the City of Chicago passed January 4, 1935, the rules and regulations of the Chicago Board of Health, and certain resolutions by the Board of Health. A comparison of the provisions of the ordinance, and particularly the rules and regulations of the Board of Health, with the 1939 Milk Act passed by the legislature, will indicate to what greater extent than the state statute the Chicago city ordinance goes. It provides for licenses both of sellers and their vehicles (R. 33, R. 34), for the display of the license emblem on each vehicle (R. 36), for the revocation of the license (R. 37), for the labeling and placarding of all bottles, cans, packages, and other containers enclosing milk or any milk product (R. 37), for the inspection of dairy farms (R. 39), for the examination of samples (R. 40), and the permissible "plate counts" for bacteria (R. 44), none of which subjects is covered by the state statute. It is obvious that the intention of Section 19 was to preserve to the City the right to continue the ordinances and regulations on those subjects not occupied by the state system of supervision.

The next, and, we think, determinative question, is whether in fact, the state of Illinois has occupied the field of approving types of containers so that any action of the City of Chicago in conflict therewith is void.

We submit that the state has by the Milk Pasteurization Act of 1939 given its approval to paper containers (termed in the Act single-service containers, but at the present time the only single-service containers in commercial use are paper.) As has been seen, Section 4 of the state statute provides for the issuance of a certificate of approval to a pasteurization plant after inspection "if the plant, equipment and methods of operation" are found to comply with the provisions of the Act. It is admitted by the answer (R. 20) that the respondent's plant is at Chemung, McHenry County, Illinois, and the evidence is uncontradicted that respondent is equipped only for the bottling of milk in Pure-Pak paper containers on two machines leased from the Ex-Cell-O Corporation, and the respondent does not have facilities to bottle milk in glass containers (R. 890).

An integral part of its "method of operation," approved by the State of Illinois (R. 695-696) is the packaging of milk in these paper containers. That the method of packaging milk is just as much a part of the method of operation which the Director of the Department of Health of the State of Illinois approved, is clearly indicated by the requirements of Section 8 that all pasteurized milk shall be placed in final delivery containers in the plant in which pasteurized and the provision of Section 15, Item 18, that "bottling or packaging of milk and milk products shall be done at the place of pasteurization *by approved mechanical equipment.*"

The Ex-Cell-O Pure-Pak machine, pictures of which are rather poorly re-produced in the printed record (R. 1469, R. 1498-1501) is equipment adapted solely to the packaging of milk in Pure-Pak paper bottles by means of a mechanical operation whereby that part of the paper bottle coming in contact with the milk is not touched by

human hands at the dairy and before being filled with milk is immersed in a hot paraffin bath, then cooled in the refrigeration unit, and automatically filled, sealed and stapled.

Section 16 (a) of the state statute gives the Department the right to suspend its certificate of approval because of unsanitary conditions of "*milk containers* or equipment." This clearly shows supervision by the State of Illinois of the pasteurization plant, the method of doing business, the equipment, and milk containers, and is an occupation of that field, at least with respect to the approval of the type of container, to the exclusion of the City.

Lest the failure of the Circuit Court of Appeals to cite the case of *City of Rockford* v. *Hey*, 366 Ill. 526 (1937), although called to the attention of that court, be treated as a waiver by us of the applicability of that case, we here expressly rely on it. See our discussion above (pp. 19-21). There the City of Rockford had no power to prohibit the sale of ice cream *in Rockford* by requiring a license and an inspection of a plant outside the city; here the City of Chicago cannot prohibit the sale of milk *in Chicago* by rejecting containers and the corresponding plant equipment which the state has approved outside the city.

We have shown above repeated references in the statute, and the state rules and regulations promulgated pursuant to it, recognizing paper containers, and in view of the approval by the State of Illinois, pursuant to the state statute, of both the pasteurization plant and the method of operation, namely the use of paper containers instead of glass containers, we insist that the State of Illinois has withdrawn from the City of Chicago the right to prohibit (as distinguished from regulate) paper bottles. On

one hand the state approves the pasteurization plant and the type of container and makes it illegal to sell milk in any way except in that container and on the other hand the City of Chicago steps in and says you may not sell in that type of container. The City is not attempting to *regulate* the container approved by the state, but to *prohibit* it, and the decisive question under this heading of our brief is whether a creature of the state, such as the City of Chicago, may challenge the approval by the parent state made pursuant to state law, of a method of operation recognized as entirely lawful by, although not required by, the statute.

We think, under the cases already cited under this heading, the answer is obvious.

Those cases hold clearly that in instances of conflict between state authority and municipal authority, the latter must give away, and we can think of no sharper conflict than the present instance in which the state approves and the city attempts to forbid.

We may ask whether in this particular case an application of this rule will lead to justice or injustice. We submit that it will clearly lead to justice. In this case we have the City of Chicago aligning the *supposed* judgment of fifty aldermen rendered in the year 1935, at a time when these containers were not widely known (and were not used in Chicago or its environs) against the Board of Health of the City of Chicago acting in 1939, the General Assembly of the State of Illinois, (which recognized single-service containers as proper in the 1939 Act), the Director of the Department of Health of the State of Illinois (who has approved the respondent's plant and its method of operation), the United States Public Health Service (which has amended its model ordinance expressly to permit single-service containers), and the practical experience of hundreds of other municipalities.

II.

State Approval of Single Service Containers Is Conclusive that Prohibition of Such Containers by a Municipality Is Unreasonable as a Matter of Fact.

Another line of reasoning leads to the conclusion that the ordinance of the City of Chicago, if construed to prohibit the use of respondent's Pure-Pak bottles, is invalid. Under the law of the State of Illinois, an unreasonable ordinance is void and the question of unreasonableness is a judicial question. This point is not to be confused with a question of constitutionality (*City of Lake View* v. *Tate*, 130 Ill. 247 (1889) at page 252).

In *Chicago and Alton Railroad Co.* v. *City of Carlinville*, 200 Ill. 314 (1902) involving the validity of an ordinance regulating speed of trains, the court said (p. 321):

> "The rule adopted in this State is, that where the ordinance is passed in pursuance of power expressly conferred by the legislature and the details of such municipal legislation are prescribed by the legislature, an ordinance passed in pursuance of such power cannot be held invalid by the courts as being unreasonable; but when the details of such legislation are not prescribed, an ordinance passed in pursuance of such power must be a reasonable exercise thereof or it will be pronounced invalid. (Citing Authorities) It is said in the *Tate* case, on page 242: 'Where the power to legislate on a given subject is conferred and the mode of its exercise is not prescribed, then the ordinance passed in pursuance thereof must be a reasonable exercise of the power or it will be pronounced invalid.' In *Hawes* v. *City of Chicago*, *supra*, Mr. Justice Baker, in speaking for the court, in discussing the question when a court may rightfully hold an ordinance unreasonable, on page 658 said: 'Where the power to legislate on a given subject is conferred on a municipal corporation, yet if the

details of such legislation are not prescribed by the legislature, there the ordinance passed in pursuance of such power must be a reasonable exercise thereof or it will be pronounced invalid.'"

In *Koy* v. *City of Chicago*, 263 Ill. 122, the court said (p. 127):

"When the legislature has authorized a city council to pass ordinances upon any subject, the power thus conferred must be reasonably exercised. Whether its exercise in a particular case is reasonable is a judicial question, and an unreasonable ordinance will be held void by the courts."

In *City of Chicago* v. *Chicago & North Western Ry. Co.*, 275 Ill. 30 (1916), holding certain provisions of the Chicago Milk ordinance invalid, the court said (p. 38):

"An unreasonable ordinance will be held void by the courts."

The fact that in this case the power of the city concerns a matter of public health does not enlarge its powers.

In *People* v. *Robertson*, 302 Ill. 422 (1922), which determined that the City of Chicago had no power without establishing a board of health, to delegate to the commissioner of health power to promulgate rules to prevent contagious diseases, it was held (p. 432):

"While the powers given to the health authorities are broad and far-reaching they are not without their limitations. As we have said, while the courts will not pass upon the wisdom of the means adopted to restrict and suppress the spread of contagious and infectious diseases, they will interfere if the regulations are arbitrary and unreasonable."

This case also laid down a rule peculiarly applicable to the facts existing in the present case (p. 434):

"One of the important elements in the administration of health and quarantine regulations is a full measure of common sense."

In the very recent case of *City of Mt. Vernon* v. *Julian*, 369 Ill. 447 (1938) dealing with a Sunday closing ordinance, the court, after saying that city councils exercise only delegated and limited powers and that the power to pass an ordinance must be delegated in express terms or be necessarily incidental to an express grant and not simply convenient, stated (p. 449):

> "When the power to legislate on a given subject is conferred and the mode of its exercise is not prescribed in the charter, an ordinance passed pursuant thereto must be a reasonable exercise of that power. *City of Lake View* v. *Tate*, 130 Ill. 247, and authorities therein cited."

These cases go on the well-established rule that the grant of power by the state legislature to a municipality is a grant of power to pass reasonable ordinances and only reasonable ordinances. It is not necessary, in order to prove such an ordinance void, to prove that it is unconstitutional, and so the rule in Illinois is much more favorable to judicial review of municipal action than that of other jurisdictions.

The question before the Court is whether, under existing circumstances, the city should be permitted to enforce its ordinance, assuming that it is to be construed as prohibiting paper containers. The question of its reasonableness must be viewed today, because, as stated in *Northern Trust Co.* v. *Chicago Rys. Co.*, 318 Ill. 402 (1925), (p. 412):

> "The power to enforce proceeds from the present or existing power or authority to enact or to provide. A municipality cannot be said to possess the power to enforce an ordinance concerning a subject upon which it has lost the power to pass the ordinance."

Assuming, therefore, as is contended by the city, that Section 19 of the Milk Pasteurization Act preserves to the

city the right to pass ordinances on the question of milk containers, the preservation of that right is a right to pass or to enforce only a reasonable ordinance on that subject, in view of today's conditions. Since the public policy of the state is that which is declared by the General Assembly, and since the General Assembly and state officers acting under its authority have declared single-service containers proper milk containers, it is palpably unreasonable for the city to attempt to enforce an ordinance absolutely prohibiting them.

The state having declared its policy that single service containers are proper does not mean necessarily that the city has been deprived of the power to regulate them, but we are not talking here of regulation, but of prohibition—a prohibition by a child of the act of its parent, by a ward of the act of its guardian, by a creature of the act of its creator, and by an inferior of the act of its superior. We rely, as indicating the unreasonableness of the enforcement of the Chicago ordinance at this particular time, on all of the cases which we have cited under the preceding point which indicate that the ordinances of a municipality may not violate or be inconsistent with the public policy of the State as declared by the General Assembly—see particularly the quotations set forth above from the following cases:

City of Chicago v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311 (1911).

City of Marengo v. *Rowland*, 263 Ill. 531 (1914).

City of Lewistown v. *Harrison*, 282 Ill. 461 (1918).

We submit that as a simple question of fact—whether or not the prohibition of single-service containers is a reasonable prohibition—the decision must be against the ordinance in view of the approval of this type of container by the sovereign.

It cannot be supposed that the General Assembly of the State of Illinois would approve single-service containers if they presented a health hazard. Its recognition of single-service containers is a declaration by the state that that *type of container* is a proper one. Still bearing in mind that we are not complaining of some *regulation* relating to single-service containers, we contend that under *People* v. *Carolene Products Co.*, 345 Ill. 166 (1931) the enforcement of the ordinance *prohibiting* single-service containers is unconstitutional under the law of Illinois, because not even the legislature has any authority to pronounce the performance of an innocent act criminal. In that case the court said (p. 168):

> "The legislature has no authority to pronounce the performance of an innocent act criminal when the public health, safety, comfort or welfare is not interfered with, (*Gillespie* v. *People*, 188 Ill. 176) and may not, under the guise of protecting the public interests, arbitrarily interfere with private business or impose unusual and unnecessary restrictions upon lawful occupations (citing authorities). No question of imitation or fraud is involved in this case and the wholesomeness of carolene is admitted. In *People* v. *Price*, 257 Ill. 587, this court said: 'It may be conceded the legislature has no authority to forbid the sale of a known wholesome article of food.'"

We paraphrase this and submit that the City of Chicago has no legal right to *forbid* the use of a *type* of milk container which the supreme legislative authority of this state has permitted and approved and declared safe and sanitary.

We contend that this is one of the important questions in this case, namely, whether a city which permits the sale of milk and cream at retail in glass bottles has any right to prohibit the sale of milk and cream in paper containers approved by the state legislature and the

state officials; and especially when said container is not shown by a scintilla of evidence or by any experience to be a hazard to public health. We respectfully contend that the Illinois legislature is the paramount authority in expressing the public health policy in this state and that it is unreasonable as a matter of fact for its creature, the City of Chicago, to refuse to recognize and approve that which its creator has approved.

In claiming that the approval of single service containers by the state legislature does not preclude the City of Chicago from prohibiting them, the city relies entirely upon the language of the saving clause in the 1939 statute.

It says that if the city had the power prior to the passage of the statute to prohibit paper milk bottles it must now continue to have that power or the statute will be either "impairing" or "abridging" the power of the city, contrary to the language of the saving clause. Prior to the passage of the 1939 act, the present suit was filed challenging the power of the city to prohibit paper containers, so that the city's assumption that it had such power prior to the passage of the statute is highly debatable and vigorously contested.

But in the midst of this controversy the state legislature of Illinois sanctioned the use of single service containers. If any single one of the highly imaginary fears (pp. 40-69) that the petitioners argue in this Court the City Council of the City of Chicago might consider in excluding paper containers were in any respect real, the state legislature never would have approved single service containers. As already pointed out, under Illinois law not even the legislature of the state has any authority to prohibit the sale of wholesome articles (*People* v. *Caro-*

lene Products Co., 345 Ill. 166 [1931],) and it follows that the City of Chicago itself has no such right.

In the absence of a legislative determination by the General Assembly of the State of Illinois that single service containers were proper containers, it might well be that the presumption of reasonableness would attach to an ordinance of the City of Chicago prohibiting them, but the moment that the state legislature has made its determination then certainly a subordinate legislative body such as the City Council of the City of Chicago is not acting reasonably in ordaining that what the state legislature has found to be wholesome is, in fact, unwholesome, and if the presumption of legislative correctness is to be carried to the limits urged by the petitioners *the presumption should be applied to the sovereign of the state speaking through the General Assembly rather than to the City Council of the City of Chicago.*

Accepting the determination by the General Assembly of the reasonableness of the use of single service containers is not impairing or abridging the power of the City of Chicago for its power never exceeded the power to pass reasonable ordinances. We have already pointed out that under the Illinois law the grant of power by the legislature to the city council is a grant of power to pass reasonable ordinances only.

While admitting (Petitioners' Brief, pp. 69-70) that, in fact, the city council did not have in mind in 1935 any of the items enumerated by the master (R. 1734-1735) upon which "the legislative body may reasonably base its decision", petitioners say (p. 70):

> "Since the question of reasonableness is determined in the light of conditions existing today, we are not concerned here with what the City Council actually did consider before it enacted the ordinance,

but with what it might reasonably have considered assuming conditions to have been as they are today or, rather, with what it might reasonably consider today in the light of today's conditions."

One of today's conditions is the determination by the General Assembly of the State of Illinois in 1939 that there was no danger from single service containers which prevented the legislature from recognizing them as proper containers.

To summarize, the power which the City of Chicago has is the power to pass reasonable ordinances. This arises not out of any constitutional question at all but out of Illinois law which says that the grant of power to a subordinate legislative body by the General Assembly is a grant of power only to pass reasonable ordinances and that the determination of reasonableness is for the judiciary. What might be presumed to be reasonable in 1935 admittedly may not be reasonable today. When the state legislature in 1939 recognized single service containers as proper containers it declared as a matter of state policy that none of the fears about paper containers now expressed by the city had any merit. The presumption of correctness arising from this determination by the state legislature of Illinois overcomes any theoretical presumption of reasonableness attaching to the determination in 1935 by the Chicago City Council that single service containers should be prohibited.

Giving this effect to state action does not "impair" or "abridge" the power of the city. Before the state statute was enacted the city had the power to pass only reasonable ordinances; after the state statute was enacted the city had the power to pass only reasonable ordinances. But in determining the reasonableness of an ordinance which the city now seeks to enforce, the superior deter-

mination of the General Assembly of the state that single service containers may reasonably be used destroys any presumption of legislative correctness in the contrary holding by the Chicago City Council.

Without impairing the power of the City of Chicago, the determination by the state legislature is the determination of the unreasonableness of the attempted enforcement of the city's ordinance which in any court supersedes the presumption of correctness which otherwise might attach to the city's action.

It was undoubtedly this which the Circuit Court of Appeals had in mind when it said:

> "The authorities are uniform that any ordinance which conflicts with any statute *or public policy* adopted by the State Legislature is invalid." (Italics ours.)

and also when it said:

> "The defendants' contention, if sustained, would give the city a broader power than that provided by the Legislature for the state. It would make the state subservient to the city. It would impute to the Legislature the purpose of withdrawing the power theretofore exercised by the city and by the saving clause reconferring such power. We are unable to believe that such an incongruous result was intended."

The approval by the state of single service containers constitutes the best guide for the courts in determining whether as a question of fact the ordinance of the City of Chicago when sought to be enforced in 1939, under conditions existing in 1939 was any longer a reasonable ordinance.

The judgment of the Circuit Court of Appeals should be affirmed.

III.

The Ordinance Is Unreasonable as a Matter of Fact.

[Answering Petitioners' Point II, pp. 34-79.]

Petitioners cite very few Illinois cases on the question of unreasonableness of ordinances even though that question is one strictly of local law. In so far as the Fourteenth Amendment to the Federal Constitution is concerned, the decisions of this Court are, of course, controlling, but in determining whether the ordinance is reasonable under Illinois law, the decisions of the Illinois Supreme Court are controlling.

We have pointed out under the preceding point the Illinois cases holding that there is a distinction in Illinois between unconstitutionality of an ordinance and unreasonableness. The following cases hold that where a general grant of power is made to a city without the details being prescribed by the legislature, an ordinance passed in pursuance of such power must be a reasonable exercise thereof or it will be pronounced invalid:

Chicago & Alton R. R. Co. v. *City of Carlinville*, 200 Ill. 314 (1902) and cases therein cited;

City of Mount Vernon v. *Julian*, 369 Ill. 447, at p. 449 (1938).

We have pointed out under Point II that if due regard is to be given to the legislative determination by the highest legislative body in the State of Illinois, the ordinance passed and sought to be enforced by a subordinate municipality cannot be sustained. In addition, we submit that the evidence in this record and matters of public notoriety, of which the courts should take judicial notice, abundantly and conclusively show in the language of *Koy*

v. *City of Chicago*, 263 Ill. 122 (1914) that the prohibition of paper containers "is so clearly and manifestly wrong that there can be no doubt about it". The rule that an ordinance or any other legislative act is presumed to be valid arises from the fact that the judicial branch of the government must recognize the right of a coordinate branch, the legislative, to determine facts for itself, so that on a merely debatable question the court will not substitute its own judgment for that of the legislative body.

Viewing the present situation realistically, it is fanciful to attribute any actual legislative determination on the question of paper bottles to the City Council of the City of Chicago when, as the *Circuit Court of Appeals* said (R. 1787), that subject was not in their minds at all in 1935. It is a far stretch of the imagination, therefore, to consider the question at bar as having received any legislative determination by the City Council in 1935; and in view of the facts in the record showing that the Board of Health of the City of Chicago made no effort whatever to ascertain the sanitary properties of single-service containers until almost a week after this suit was filed (R. 1003), it is also difficult to see where any real administrative determination was made. The petitioners' plea for attributing correctness to the legislative determination is wholly technical.

Legislatures and city councils in the exercise of the police power may, of course, prohibit all things harmful to health and to the safety and general welfare of society even though the prohibition invades the liberty or property of an individual, but when the articles or things prohibited do not injure the public health or the safety of society, all reason for the prohibition is absent and the

prohibition is not justified, and clearly amounts to confiscation of property and deprivation of liberty in violation of Section 2, Article II of the Illinois Constitution.

Under the laws of the State of Illinois the legislature has no right to prohibit the sale of a known, wholesome article of food and the same consideration would preclude a prohibition of a known, harmless, modern container for milk.

People v. *Carolene Products Co.*, 345 Ill. 166 (1931);

Carolene Products Co. v. *MacLaughlin*, 365 Ill. 62 (1936);

People v. *Price*, 257 Ill. 587 (1913).

In contending that the ordinance is both unreasonable and unconstitutional, we do not overlook the rule of law that innocent acts may sometimes be prohibited where necessary to abate an evil which is a proper subject of the police power. This is not such a case. The evil intended to be remedied by this ordinance is briefly and very clearly stated in the "Public Health Reasons" explaining the purpose of Section 3094 as follows (R. 109):

> "The use of standard milk bottles for delivering milk and milk products in quantities less than one gallon is required in order to prohibit delivery in such containers as buckets, fruit jars, etc., which may be difficult to wash and to subject to adequate bactericidal treatment, which cannot be filled and capped with the proper equipment used for these purposes, and which it is often difficult to label properly."

Conceding for the purpose of this point the right of the City to require liquid milk and cream to be sold in containers, we deny the right of the City to prohibit the use of a container which is not within the object of this section of the ordinance; and which though modern, por-

motes public health and proper sanitation as effectively as the commonly accepted and officially approved containers and which does not lend itself to any of the evils which the City has the power to stamp out.

We submit that the action of the petitioners is arbitrary and unreasonable. Succinctly stated, respondent is denied the right to use its paper milk container to compete with dairies using the out-moded and much abused glass milk bottle. This restriction fosters monopoly rather than protects against it. The restriction discourages competition rather than encourages it. The result of the supposed regulation is not to "regulate" the sale of milk in paper containers, but to prohibit it and actually to preclude persons from engaging in the milk industry in competition with glass bottle dairies.

The evidence shows, as the trial court correctly found (R. 1752) that the use of the paper container creates "no new or unusual health hazard," and "that they are safe and sanitary containers in which milk may be delivered."

The trial court held in substance that in matters affecting public health the law should adopt the best scientific thought of the age. When research and investigation, coupled with vast experience, justify the adoption of new methods without prejudice to public health, it should unhesitatingly be done. Were the rule otherwise, progress would be stifled (R. 1755).

In considering the reasonableness of the ordinance of the City of Chicago as a question of fact we first, of course, have pointed to the approval of single service containers by the state legislature. Next we point to the approval of Pure-Pak paper milk bottles and of the respondent's pasteurization plant by the Department of

Health of the State of Illinois, a fact which is disclosed by the stipulated testimony of Mr. S. V. Layson, Milk Sanitarian of the Department of Public Health of the State of Illinois with offices at Springfield (R. 695). While the court may decide that as a *matter of law* the State Department of Health has no jurisdiction to *compel* the petitioners to permit the use of single-service containers in the City of Chicago, the fact is undisputed that the Department of Public Health of the State of Illinois has approved the Pure-Pak, single service container, and that fact cannot be overlooked in determining whether the action of the City of Chicago, in undertaking to prohibit it is unreasonable or is necessary to protect public health.

In determining whether the petitioners are acting reasonably the Court should also take into consideration the fact that the United States Public Health Service, under the supervision of Dr. Thomas Parran, has approved paper milk containers (R. 1661, 1678, 1699-1704). Concededly, the United States Public Health Service has no plenary jurisdiction in the City of Chicago, but it is admitted by the petitioners that its standards are considered high and are considered safe, so the action of the United States Public Health Service may not be overlooked in determining whether the City of Chicago is acting reasonably in excluding single service containers (Arnold, R. 1165).

The record shows that the Board of Health of the City of Chicago has approved single service containers under the standards laid down by the United States Public Health Service and has recommended an amendment in the ordinance here challenged to permit the sale of milk in single service containers (Bundesen, R. 1211; R. 1698-1704). It is true that the Board of Health has no power

to change an ordinance and that its recommendation is not binding either upon the petitioners or upon the Court, but in determining whether the petitioners are acting reasonably in excluding single service containers, the action of the Chicago Board of Health cannot be overlooked.

Next, in determining whether the City of Chicago is acting reasonably, weight must be given to the experience of other cities where the use of single service containers has been permitted and where there is not the slightest suspicion that they have created or tended to create any health hazard. We are here not referring to the fact that the municipalities which have permitted the use of Pure-Pak containers are great in number on the theory of counting noses (as the petitioners seem to think) but that the favorable results of the use of the container in those municipalities may not be overlooked in deciding whether the City of Chicago is acting reasonably in the present case. (Furthermore, this evidence was admissible to show how widespread was the use of these paper bottles to prove that they were standard bottles.)

The evidence proves that respondent is and has been engaged in the sale of wholesome milk and milk products in the State of Illinois and sells its products in these containers in suburban communities in Cook, DuPage and Lake Counties without interference. This had been done daily for almost two years before the trial court's decision with no consequent injury to public health. These experiences were persuasive to the trial court; and obviously, if these experiences in the use of paper containers had disclosed any health hazards, petitioners most certainly would have presented proof of this fact by competent evidence, and not relied on mere theory and conjecture.

We contend that it can be safely and logically assumed that the milk consumers in Evanston, Winnetka and Oak Park and sixty-five other communities in and about Chicago are no less susceptible to disease than are the residents of Chicago. There is nothing peculiar about these milk consumers which distinguishes them from Chicago citizens. This argument applies with equal force to the residents and milk consumers in Washington, Detroit, New York City, Boston and Philadelphia and hundreds of other cities and villages which use paper containers daily. Geographical location does not result in new and peculiar health hazards reasonably related to milk containers.

No reason is advanced, and no evidence was offered, to sustain the theory of the city that peculiar local conditions exist in the City of Chicago which prevent the court from considering the satisfactory experience of hundreds of other communities in using paper milk bottles. Millions of quarts of milk in paper bottles are being sold daily in Illinois and to army camps throughout the United States (12,000 quarts daily are sold to Camp Grant, Rockford, Illinois, by respondent), without suggestion of ill-effect.

That the city has no real fear of the evils which it argues the city council might consider in prohibiting paper milk containers is proved by the fact that since the date of the decision of this case by the District Court, October 18, 1940, the city has permitted millions of paper containers which are not protected by any injunction of any court—state or Federal—to be used freely in the City of Chicago. No harm has resulted from the use of such other containers or from the distribution of milk in plaintiff's containers under the protection of the present injunction and the fact that the petitioners

have voluntarily permitted the use of these other containers is eloquent proof that petitioners well know that no public health hazard is actually involved.

Another fact which ought not to be overlooked in deciding whether the prohibition of paper milk containers is reasonable, is the universal use of paper containers daily for liquid foods of all types. The point here is not that the articles and uses are so similar that the City may not permit one without the other, but that the widespread use of paper containers stamps as unreasonable when treated as a matter of fact and not as a matter of law, the action of the petitioners in prohibiting paper milk containers.

The City stipulated that it permits the use of single-service paper containers for liquid coffee, soft drinks, and ice cream sold by drug stores and restaurants without restriction, inspection or regulation (R. 694). This is an administrative decision which proves that they are not a health hazard. Such containers are related to the public health of the inhabitants of the city and are used daily by practically all citizens of the city in consuming food and drink. Infants, the aged and convalescents are permitted to partake of ice cream dispensed in paper containers over which the Board of Health exercises no supervision.

Fiber-board pails, ice cream cartons, drinking cups, tall paper tumblers and other articles of paper too numerous to mention which are much more lightly paraffined than are Pure-Pak containers have been used for years and are still being used in Chicago without inspection and, most significant of all, with the acceptance by the common man that there is nothing more sanitary than a single-service paper container.

It was stipulated that paper containers were permitted without objection by the Board of Health and without

any test to determine the sanitary quality of the paper used for the sale of ice cream, butter, lard, cottage cheese, other kinds of cheese, oysters, pickles, soft drinks and liquid coffee; that ice cream is sold in metal cans with a thin paraffined paper liner between the ice cream and the container; that paraffined paper is permitted to be placed across the top of metal milk cans underneath the metal cover of such cans; that paraffined drinking cups and paraffined paper straws are used in the City of Chicago, and that paraffined paper liners for dishes in which ice cream is served are also used, all without objection or regulation by the Board of Health (Stipulation, R. 694).

The common man's acceptance as a truism that paper containers are sanitary is a better guide to the truth than are learned theories of the experts, real or pretended. It leads inevitably to the conclusion that paper milk containers are sanitary. The trial court considered all of this evidence and came to the conclusion that no health hazard was presented.

Lastly, in determining whether the City of Chicago is acting reasonably, we think the Court should give careful consideration to the evidence before it in this case proving that the single service container in question has not at any place or at any time been even suspected of constituting a health hazard.

We now turn to the specific arguments advanced by the city in support of its theory that the prohibition of paper containers is reasonable.

Sanitation and Absorption.

[Answer to Point II-(b)-2; Petitioners' Brief, pp. 44-51.]

It is argued that paper milk bottles are rightfully prohibited because the container board absorbs a few drops of milk. It is argued by the city that this factor "is of utmost significance." (p. 48). Yet the petitioners do not point out, nor does the record show in any respect, that a public health hazard exists merely because a few drops of milk might be absorbed in the corners of a paper milk bottle. There is no evidence in the record that anyone ever became ill or infected, or was likely to become so, by reason of a few drops of milk absorbed by the paper board. No witness heard of any such experience, not even Dr. Arnold, petitioners' main expert witness. On the other hand, petitioners champion the glass bottle which the evidence and common knowledge show is used over and over by milk containers, different ones daily, many times; and which multi-used glass bottle is exposed daily on the house door-step, subject to contamination by contact with all the domestic animals about the home or neighborhood, ordinary exposure to the weather, irritants in the air, breakage and leakage, in hot or cold weather. In freezing weather it is common knowledge that the cream is expelled out of the mouth of the bottle and exposed to contamination on the door-step, window-sill, rear porch or the other usual depositories for glass milk bottles. Petitioners' argument that the absorbency of paper milk bottles is of "the utmost significance" fails because of the absence of proof that such absorbency ever caused or might cause any illness or disease. The proof of the pudding is in the eating. The argument of petitioners is based on pure theory. There is no danger in paper bottles compared to paper

caps made of the same material and permitted by the city to be used on glass milk bottles. These caps permit absorption of milk and they are taken off in common use and exposed to the bacteria and the irritants in the air and afterwards replaced on the bottle with the bacteria on the inside. This may easily contaminate the contents of the bottle. The imperfect washing process on the glass bottle and haphazard inspection of glass bottles by the petitioners (1400 bottles being inspected over a period of a year when 365,000,000 quarts of milk are sold in glass bottles in the City of Chicago) offers slight support to the petitioners' efforts to discredit the single service paper milk bottle on the absorption issue (R. 986 to 996).

If the absorbency argument now advanced by the defendants has any plausibility the Illinois Legislature adjudged it to be of slight significance.

The State of Illinois has repudiated absorbency as a reason for prohibiting paper containers, for Item 5 (e) of the minimum requirements promulgated by the Director of the Department of Health, (above, pages 28-29) provides only that "all single-service containers shall be so treated as to be as impervious to milk *as practicable*," thus recognizing the impracticability of making them entirely impervious. This policy of the state controls the action of the City of Chicago.

Dr. John W. Rice of Bucknell University, Lewisburg, Pa., found the paper bottle superior to the glass bottle in abating the spread of infectious diseases because of its high inherent sanitary quality (R. 406-7; 424). His research work and experience disclosed that the bacteria found in the paper board were not pathogenic. He never found any pathogenic bacteria on any paper board used in paper milk bottles (R. 411). In his opinion, supported by research, absorption of milk in the paper board

presented no health problem (R. 425). This witness was requested to testify by the defendants and his time and expenses were paid by the city.

Dr. John R. Sanborn of the New York State Agricultural Experiment Station, Geneva, N. Y., testified positively that the absorption item was insignificant (R. 286, 289-290) and the disintegration test furnished an index to the sanitary condition of the manufacture of paper containers. This being true, all reasonable and necessary safeguards exist in the matter of bacteriological control and thus the absorption argument loses all force.

Mr. M. J. Woodman of the Evanston, Illinois, health department, testified that in his experience disintegration tests offered adequate protection at all times and his experiments showed that the empty paper container was essentially free of bacteria in 300 to 400 tests (R. 680).

Dr. M. J. Prucha of the University of Illinois, testified that after two and one-half years of research, study and experience he found the absorption by paper caps used in glass milk bottles greater, relatively, than by Pure-Pak containers because of lighter paraffining (R. 716), but testified that even the absorption by the paper cap presented no health hazard (R. 659).

Dr. Paul H. Tracy of the University of Illinois, after two and one half years of study, experiments and experience, found that the absorption of milk into the paper board presented no health problem whatsoever (R. 510).

H. M. Packer of the Philadelphia Health Department, with years of experience in Philadelphia, where milk has been sold in paper containers for many years, found no objection to the use of the paper bottle by reason of any absorption (R. 1363, 1364).

Dr. E. H. Yunker of Philadelphia, with considerable

practical experience in the use of the paper milk bottle, was of the same opinion (R. 1387).

The City's effort to capitalize on the absorption issue finds no support from practical experience. As the case takes final form, this appears to be the chief reliance of the defendants. All the expert witnesses in this case (except Dr. Arnold) were unanimous that health authorities possessed as adequate bacteriological control over paper milk bottles as they had over glass bottles.

We respectfully submit that the City's argument on the absorption issue has no merit whatever when considered in the light of wide practical experience for years. The container has had sufficient use in hundreds of cities and villages daily so that if absorption presented any hazard to public health, the City would have readily presented such evidence. Not one witness was produced by the City to testify to any fact supporting this academic objection.

It is conceded that absorbency is material only because of fear of contamination from the milk container board, yet Dr. Arnold testified that he had never found pathogenic bacteria on milk container board (R. 1148).

Dr. Arnold also testified (R. 1165) that the model ordinance and code of the United States Public Health Service were generally considered a reasonable and safe standard for milk sanitation (R. 1165). Surely, since this service recommends the use of single-service containers and approves them in its model milk ordinance, the absorption of a few drops of milk now complained about by the City is no real detriment. The present universal recognition of the merits of single service containers in spite of some slight insignificant absorbency, and the fact that there is no suspicion that this absorbency has ever, anywhere, at any time, constituted a menace to health is a complete

answer to the City's present argument. Practical experience is more potent proof than mere speculation.

Paraffin Used on Paper Containers.

[Answer to Point II-(b)-3; Petitioner's Brief, pp. 51-53.]

The City contends that because a small particle of paraffin might get into the milk, the containers must be denied use by the City.

Dr. Robert A. Black, a member of the Chicago Board of Health, testified (R. 1226), that he knew "nothing in way of proof on either side" with regard to the sanitary aspects of the single-service container, and when asked regarding the merit or demerit of milk containing paraffin being fed to infant babies, he said he would not want infants in his care to have milk containing paraffin. He further said (R. 1228) that paraffin was, in his opinion, inert and that it was a by-product of oil. He further testified that he never read or heard of a case of a baby being fed paraffin in milk which came from single-service paper milk bottles and that feeding oil to children to secure an evacuation of the bowels, in his opinion, "does not give any bad effects" (R. 1228). He further said he never made any inquiry nor had any information with regard to this suggested health hazard nor was inquiry made in communities and from officials in places where paper milk bottles were used (R. 1225-30).

Dr. Lloyd Arnold had a theory that the "spicules" would injure the intestinal tract, but he forgot that spicules, if any existed, were dissolved in the milk, which was heated when fed to babies, and he, too, never heard or knew of a case of a baby being injured or of its intestinal tract being irritated by reason of drinking milk from paper milk bottles (R. 1113-15). This is in sum and

substance a frank presentation of the evidence offered by the City on this issue. We submit that there is nothing in this type of testimony which presents any genuine objection to the use of paper milk bottles. Conjecture and surmise do not rebut years of experience in the use of millions of paper milk bottles daily throughout hundreds of cities and villages in the United States and elsewhere. *If there were any meritorious objection to the use of paraffin on paper milk bottles, the health officials in the hundreds of cities and villages using paper milk bottles daily, including the City of Chicago at the present time, would certainly know of it and have proof of it by now;* and the City would most certainly have offered some testimony to support the objection it now makes.

Paraffin is a wholesome product, and when applied to the paper milk bottle affords additional protection to the bottle and in no manner does injury to health. The City did not produce one witness who had any real information or data to prove to the contrary.

Dr. Arnold testified that he had never heard of any child being made ill by swallowing paraffin (R. 1172) and that he never knew, heard or read of any child or aged person having spicules of paraffin in their intestinal tracts (R. 1172-1173).

It is, in fact, a matter of common knowledge that paraffin is not harmful to health. It is commonly used by the housewife on her jellies and at one time or another has probably been chewed by every school boy.

Dr. William D. McNally, for 17 years coroner's toxicologist of Cook County, Illinois, and one of the outstanding toxicologists in this section of the country, testified that paraffin is not a poison either to adults or infants, that there is nothing about its chemistry which is harmful to human health, either adult or infant, that if

the taking of paraffin were to cause disturbance to the human body that would be the type of case that would come to him professionally; that he was familiar with medical literature generally and that he knew of no instance, either in literature or from his own experience or from consultation with physicians or from any source, where bodily disturbances of any kind were attributed to or suspected of being caused by accidental or other taking of paraffin; that the witness himself had chewed paraffin and that he had seen numbers of other persons who had chewed paraffin and undoubtedly swallowed particles larger than 100 milligrams without any ill effect (R. 1262-1264). He stated that large particles of paraffin might act as an irritant to a person with an inflamed bowel, but that he could not conceive of such particles coming from a Pure-Pak container (R. 1265). Paraffin is an un-nutrient medium for bacteria (R. 1266). Bacteria do not penetrate paraffin, and this is the reason that housewives use it for jams and jellies because it prevents the bacteria and yeasts from entering them. A piece of paraffin twice the size of a kernel of wheat might be irritating, but if it was in very small particles it would not be (R. 1296).

Dr. Tracy of the University of Illinois gave similar testimony (R. 481). He stated that paraffin was used by his mother in his boyhood and that in modern times it is being used in treating all types of waxed papers, such as cheese boxes, butter boxes, milk bottle caps and drinking cups and that they used to make chewing gum out of it (R. 481-482). He testified that the chipping off of slivers of paraffin presented no health problem (R. 529-530), and that no disease had ever been traced to paraffin in the operation of the University dairy (R. 503).

Dr. Sanborn testified that in his opinion the paraffining

process is free from public health hazard, that there is nothing in the paraffin that is detrimental to the properties of Grade A milk put into a container, that in his opinion and experience it would not change the taste of the milk or cause any odor to get into the milk (R. 178). He testified that there was nothing in the oily substance of paraffin that was dangerous to health (R. 295).

Dr. Prucha testified that he tested paraffin in the paraffin bath of an Ex-Cell-O machine and could not find any bacteria. The samples were taken under usual working conditions at the plant (R. 651).

Dr. Rice testified that the paraffin presented no health hazard (R. 413) and other witnesses testified to the harmless nature of paraffin (Packer, R. 1363; Vaughn, R. 1305).

The General Assembly of the State of Illinois and the State Department of Health have approved of the use of single-service paper milk bottles which are coated with paraffin and have declared them proper.

Petitioners rely (Brief, p. 53) on the *Criminal Code*, Illinois Revised Statutes, 1939, c. 38, par. 14. It is apparent from reading the criminal statute that it has no application herein and that the remote possibility of small quantities of paraffin getting in the milk is not an adulteration denounced by that statute, because the slight possibility of minute particles or spicules of paraffin getting into milk is not an adulteration of milk. It surely cannot be said that the Illinois Legislature, in recognizing and approving paper milk bottles, and the Director of the Department of Health of Illinois and the United States Public Health Service in approving their use and providing minimum requirements for their use, would countenance any adulteration of milk.

Odors From Paraffin

[Answer to Point II-(b)-4, Petitioners' Brief, pp. 53-56.]

The brief of the petitioners states: "It is a well-known fact that milk rapidly absorbs odors to which it is exposed" (p. 53). From this they conclude that paper milk containers *may conceivably* impart odors from paraffin or from bacteria to the milk and may therefore be prohibited. It is highly significant that although the general fact of "ready absorption" is claimed, the city offered no evidence whatsoever of odors ever getting into the milk, either from paraffin (oxidized or not) or from bacteria.

Dr. Sanborn, who is quoted at length on pages 54 and 55 of the petitioners' brief, testified *affirmatively* that there was no evidence that paraffin had ever changed the taste of milk (R. 294-295). Dr. Tracy testified that one of the first tests made at the University of Illinois was to determine whether paraffined paper bottles imparted a taste to the milk and he found that the paraffined paper bottles had no effect upon the flavor of milk (R. 494) and further said that paraffin had no flavor (R. 494-497). The flavor of milk in glass bottles was changed when exposed to light (R. 494-497).

There is not one witness or a particle of evidence in this record proving or tending to prove that rancid odors or any unpleasant odors have come from paraffin used on paper milk bottles. Elaborate effort is made to support this theory of defense by referring to the testimony of Dr. Sanborn, who frankly admitted that paraffin heated at high temperature would oxidize. Dr. Sanborn did not know what these temperatures were but stated that high temperatures coupled with stale and uncleaned paraffin bath chamber for three weeks would produce "off" odors (R. 304). This proves nothing. There is no evidence

that anyone in using paper milk bottles ever experienced off odors by reason of the oxidation of paraffin.

Petitioners refuse frankly to face the facts shown by the uncontradicted testimony of the witnesses, Howard R. Peterson (R. 942-45) and Paul V. Keyser (R. 1334-1355). The latter testified that no oxidation will occur in paraffin below its melting point, which is 125° F. to 130° F. (R. 1347). As paper milk bottles are not exposed in the home or anywhere else to temperatures of from 125 degrees to 130 degrees F. oxidation could not occur after the paraffining process had been completed at the dairy.

Howard R. Peterson whose experience and experiments with paraffin used on paper containers are wholly uncontradicted and unimpeached testified that in the bottling operation paraffin at 210 degrees F. would not oxidize for twenty hours (Peterson, R. 943, 958-959). This is a higher temperature than is ever reached in the use of the Pure-Pak machine (Prucha, R. 711-712). The temperature coefficient of oxidation of paraffin is fifteen degrees, so that at 195 degrees F. the initial resistance to oxidation is forty hours; at 180 degrees F. is eighty hours and at 165 degrees F. is 160 hours (Peterson, R. 943-944). The Pure-Pak machine consumes about 30 pounds of paraffin per thousand containers (Peterson, R. 955, 957; Dean, R. 961), has a capacity of 110 pounds of paraffin wax (Dean, R. 960), and coats between 1500 to 2000 containers per hour (Dean, R. 960; Peterson, R. 947) and the factor of safety against oxidation is from 400% to 500% (Peterson, R. 944-945).

It is undisputed that oxidized paraffin is rancid in odor and easily detected (Sanborn, R. 304; Peterson, R. 956). It also changes color (Sanborn, R. 304). It is undisputed that the Pure-Pak machine in operation gives off no

rancid odor (Dean, R. 965; Peterson, R. 952, 955-956). Dr. Arnold witnessed the machine in operation in the Risdon Dairy, Detroit, Michigan, for several hours (R. 1160) while gathering data for Plaintiff's Exhibit 4, a report dated December 4, 1937 favorable to paper containers, which see (R. 1397), and he did not recall any rancid odor (R. 1163). He testified that paraffin in its natural state is odorless (R. 1163).

Dr. Arnold also testified that he had never heard of anyone becoming ill from the oxidation of paraffin (R. 1179). There is no testimony either that the weak organic acids resulting from the oxidation of paraffin have any ill effects, or that paraffin used on milk containers has ever oxidized, or that milk has ever received an odor from paraffin, and the fact that oxidation of paraffin can be detected by simply smelling the container as Dr. Sanborn did at the hearing is ample protection against any imaginary danger that the City fears.

So much for the manufacturing process and its lack of possibility of oxidation. When filled with milk, it would take hundreds of hours in the blazing sun to oxidize the paraffin on the container (R. 966). So the possibility of oxidation there disappears.

The tests of Dr. Rice on the odor of bacteria mentioned on page 56 of petitioners' brief were not on Cherry River board used in Pure-Pak containers (R. 416, 431-432). He got the same odors from milk bottle caps (R. 416-417). These odors came from the bacteria (R. 416), and the problem presented by odors from bacteria on paper bottles is, therefore, no different than that presented by odors from bacteria on glass bottles or on paper caps used on glass bottles. The language of the witness was very picturesque and the City cannot be blamed for making the most of it, but the fact remains that the problem

has nothing more to do with paper bottles than it has to do with glass bottles. The witness originally embarked on these experiments only to test paper caps for glass bottles (R. 415).

That the possibility of odors from bacteria is not a problem of paper containers any more than of glass containers is clear from the testimony of this witness, that as a bacteriologist he considered paper containers now in a state of freedom from bacteria justifying their use for milk and cream (R. 412) and that paper bottles are superior to glass bottles (R. 406-407, 424).

The final statement of petitioners (brief, p. 56) that it is not unreasonable "to prohibit the delivery of milk in containers that impart an odor to milk" implies that there was evidence that odors had been thus imparted to milk by paper containers. There is no evidence whatever of this in the record. The absence of all evidence of odor being transmitted to milk by paraffined paper containers is the complete answer to the city's argument under this point.

The Sanitary Control of Paper Containers.

[Answer to Petitioners' Point II-(b)-5; Petitioners' Brief, pp. 56-67.]

In petitioners' brief, petitioners argue that because the paper mills and the converting plants in which the paper is formed into printed "blanks" are located outside of the city, there is an absence of adequate sanitary control over the containers and the city may reasonably exclude them because the city cannot be forced to go outside of the municipality to examine the mills and plants.

If this argument is sound, every article of paper which is used as a food container in the City of Chicago is sub-

ject to the very same objection. It is true that in order to produce a sanitary paper milk board the conditions in the mill and in the converting plant must be sanitary, but the testimony is uncontradicted, forceful and persuasive that the mere passage of time is a great purifier, particularly with respect to the harmful type of bacteria, so that when the flat blanks are received at the dairy the passage of time has itself acted as a purifying factor (Prucha, R. 702-703; Plff's. Ex. 46, R. 1572). While Dr. Arnold, the City's witness, disagreed to some extent with Dr. Prucha's conclusions as to that, he had conducted no complete experiments to determine the time that bacteria survived and he stated that it was a fact that the number of live bacteria on paper board decreases with time (R. 1174) and that in his opinion Dr. Prucha's experiments on self-purification of paper were neither false nor misleading (R. 1176).

Dr. Arnold's objection to inspection of paper containers without going to the mill is that otherwise he would not know where the paper came from (R. 1119, 1146-1147). This does not differ in any detail from the situation of a glass bottle, which may have just come back from the city dump. The source of the bacteria disclosed by a rinse test on a glass bottle is no more certain than the source of the bacteria on a paper bottle, but common sense should tell us that in the case of the glass bottle, the chance of the bacteria being human bacteria is much greater than in the case of the paper bottle. Furthermore, one glass bottle which is contaminated can contaminate others in the common washing process, whereas one contaminated paper bottle (there being no evidence in the record of any such contamination) will not contaminate any others.

Turning to practical milk sanitarians whose testimony is preferable to that of mere theorists, we refer to the testi-

mony of *Dr. Fred O. Tonney*, formerly connected with the Chicago Board of Health for many years and a man thoroughly familiar with both the glass bottle and the paper bottle operations, who testified that he saw no necessity for visiting paper mills (R. 915), that he considered the disintegration test on a paper bottle a more severe test than the rinse test employed on glass bottles by the Board of Health (R. 914), and that he considered the standard rinse test for milk containers equally applicable to glass and to paper from a sanitary standpoint and from a public health standpoint (R. 913).

Dr. H. A. Orris, in charge of milk control for a number of Chicago suburbs where Pure-Pak paper milk bottles have been in use now for more than three years and at the time of his testimony had been in use approximately a year, testified that the control of paper containers was at least equal to the control over glass bottles (R. 572-573), that tests of milk sold in paper containers were satisfactory (R. 575) and that empty paper bottles taken at random, off the line unfilled, had been tested by the rinse test regularly and satisfactorily (R. 575). He receives reports from Dr. Jordan of the American Public Health Association of the quality of the paper board and he has never had any occasion to doubt those reports (R. 576), but if he ever did have a doubt he could easily make a disintegration test in his own laboratory as he has the paraphernalia for it (R. 576). He stated that he would prefer, instead of going to the mill, to take the paper board from the container as it was on the filling line at the dairy (R. 576). He testified that he could check immediately the authenticity or genuineness of reports received and that if he found something wrong with the paper bottle he could stop the use of it in exactly the same way that he does with the glass bottle (R. 595). When asked point-blank:

"Have you had any less control over the paper bottle than you have over the glass bottle?" he answered, "I don't think so." He stated that he had not found any problems in the use of paper containers since November, 1938, in performing tests and research work, of which he felt he did not have absolute control (R. 600).

Mr. M. J. Woodman of the Evanston, Illinois, Health Department, testified that he had never had occasion to go to the paper mill or fabricating plant, that he never considered it necessary; and further, that if he needed to make a test of the paper bottle he could do it very quickly in the laboratory (R. 675-676).

Dr. John R. Sanborn testified that a disintegration test made in the City of Chicago on a carton after it had been sent to the dairy would disclose whether or not that carton was then in a sanitary condition (R. 266), that a disintegration test would give an absolute test whether or not that particular carton was sterile or contaminated and that by picking at random cartons of that kind at the milk plant the public health authorities of the City of Chicago could determine whether or not the cartons being used were sterile or contaminated (R. 267). The cost of the apparatus for performing the disintegration test is $20.00 to $30.00 (Sanborn, R. 266).

Dr. M. J. Prucha of the University of Illinois, testified that the rinse test and the disintegration test on paper containers gave public health authorities adequate and sufficient bacteriological control over the single service container (R. 819). In his opinion, it was not necessary to go to the mill (R. 722). Comparing the tests, for ascertaining the sanitary condition of the glass bottle and the disintegration test and rinse test on the paper container, he testified that he was of the opinion that public health

would now be preserved without any certified list of mills such as he had mentioned in his testimony and in some of his previous writings (R. 833-834). He testified that by his bacteria counts on paper board he could determine whether it would be fit to be used for milk containers (R. 838).

As to detecting the presence of re-used material instead of virgin spruce for the container board, it is undisputed that it may easily be detected (Arnold, R. 1168-1169; Packer, R. 1376).

The City's contention that it cannot supervise paper milk bottles unless it sends inspectors to the paper mills and converting plants where the containers are manufactured wholly disappears upon a consideration of the evidence. It is true that Dr. Prucha of the University of Illinois and Dr. Sanborn of the New York State Agricultural Experiment Station considered it necessary *for their purposes* to examine the paper-making and converting process. One becoming an outstanding expert in this field would naturally start at the beginning. They, however, have furnished their evidence, and their testimony shows clearly that local health authorities need not go to the mills before approving paper containers.

Health officers in the ten North Shore suburbs about Chicago and health officers in Philadelphia saw no need to go to the mills to satisfy themselves of the sanitary properties of the products. Why should Chicago? Public health administration is—or should be—a matter of common sense. The evidence is undisputed that the public health authorities have just as much control over the sanitation of the paper milk container after it reaches the confines of the City of Chicago where it is subject to physical and chemical tests as they have over glass milk bottles, milk itself, or any one of thousands of food

products and food containers manufactured outside of the city and brought there for sale.

There is no more justification for prohibiting the use of paper containers for milk because the City did not see the paper manufactured than there would be for prohibiting glass milk bottles merely because the health inspector cannot follow every glass bottle around on its numerous trips to the store, customer, garbage can, city dump, milk dealers' bottle exchange and thence back to the dairy and to the customer again.

What in the latter situation does the City do? It takes reasonable precaution to see that the bottles of known bad origin (dump and junk yards) are sterilized and that all bottles are washed in chlorine solution so that tests at random (1,400 per year out of more than a hundred million glass bottles delivered yearly—R. 986) seem to indicate that reasonably sanitary results are being obtained.

The mere fact that it is physically possible to subject paper milk bottles to the higher standard of tracing them to their source for every delivery (since each delivery is a single service) does not reasonably justify imposing a requirement that each source be checked as a condition precedent to the use of the paper bottle any more than it would be reasonable to require that glass milk bottles be traced from the dairy back to the Milk Bottle Exchange and again to the dairy before being reused.

Transparency and Cream Line in Paper Containers.

[Answer to Point II-(b)-6; Petitioners' Brief, pp. 67-69.]

Petitioners seek to justify the exclusion of paper milk bottles because they are not transparent, so that the cream line is not observable and because cream does not

rise to the top in a paper bottle as it does in a glass bottle. It was stipulated (R. 1332) that homogenized milk is sold daily in the City of Chicago without any objection from the petitioners. The very definition of this milk prevents the showing of a cream line. It is permitted by the same statute that we rely on in this case as a protection to our right to sell milk in paper bottles.

The state statute under consideration defines homogenized milk as follows (Ill. R. S. 1941 c. 56½, "Foods", Para. 115, subpara. 4):

> "Pasteurized homogenized milk is milk that has been mechanically treated in such manner as to alter its physical properties with particular reference to the condition and appearance of the fat globules, to such an extent that no visible cream separation occurs after 48 hours storage and fat tests of the milk at the top and bottom of a quart bottle do not show a difference in fat percentage exceeding two-tenths of one per cent (0.2%)."

No reason exists for permitting homogenized milk in glass bottles which do not show a cream line and prohibiting Grade A milk in paper bottles which do not show a cream line. There is no evidence in the record showing that the non-transparency of the paper bottle affects public health or perpetrates a fraud on the milk consuming public. It is universally agreed by all milk sanitarians and public health experts that the cream content is easily ascertained by performing the Babcock test on milk whenever desired (Tracy, R. 503; Orvis, R. 573). There is no evidence that plaintiff's milk in paper milk bottles does not have sufficient cream or fat content. Obviously, there is no requirement in the ordinance and can be none prohibiting the public from purchasing milk with cream diffused throughout as in homogenized milk permitted by statute. They may buy it in glass bottles if they want

the cream concentrated or in paper bottles if they desire that the cream be diffused, as in homogenized milk.

Section 3094 of the ordinance requiring "standard milk bottles" was designed to procure sanitary containers for milk. There is nothing in Section 3094 or the "public health reasons" for its enactment (R. 109) having any relation to the transparency of paper bottles or the cream line. This section is not an ordinance on weights and measures, nor was it enacted to regulate cream lines.

The "standard milk bottle" even if of glass, may have a long narrow neck as shown by some of the milk bottles in Plaintiff's Exhibits 13 and 14 (R. 1493-1495), and this mislead the purchaser to think he is getting lots of cream when he is obtaining very little. Furthermore, the cream line does not necessarily determine the amount of butterfat in particular milk (Orvis, R. 573).

The petitioners' argument on this issue wholly ignores the fact that *permitting* the use of paper milk bottles does not *compel* a single person in Chicago to buy milk in them if he desires a transparent bottle. This is the buyer's privilege and election. If he does not want the whole milk and wants to pour off the cream he may buy his milk in glass. Granting him that privilege does not, however, under any rule of reason or under public health principles justify depriving plaintiff of the right to sell milk in paper bottles, nor does it justify depriving customers of their right to purchase milk in paper containers. Whether the cream concentrates is meaningless from a public health standpoint. The significant thing is that there is sufficient butterfat to meet the requirements, easily determined by routine tests.

There is nothing in any of the provisions of the ordinance or the public health reasons for its enactment requiring transparency of a "sanitary dispenser", bottle or

container for milk. There is not a scintilla of evidence in the record which shows or even tends to show that it is necessary or desirable from a public health standpoint that milk bottles be transparent.

On the other hand, there is affirmative evidence that the transparency of the glass milk bottle is a decided disadvantage from the standpoint of the taste of the milk. The paper bottle shuts out rays of the sun which give milk in glass bottles which are exposed to the sun a bad taste because of the sun's action on proteins in the milk (Tracy, R. 494-495). Dr. Tracy further testified that paper is a better insulator against heat than glass is, resulting in maintenance of the coolness of bottled milk longer in paper than in glass (R. 497). This is shown by actual tests and is of great importance because low bacteria counts in milk depend almost entirely upon maintaining the milk at low temperatures which are unfavorable for the multiplication of bacteria.

Condensed milk and other liquids and food products of all kinds are permitted to be sold in tin cans even though the City does not have the same opportunity to inspect the plant in which they are canned as it has in the case of respondent's milk plant, and it is clearly unreasonable to prohibit plaintiff's container on the ground that it is not transparent.

The approval by the State and by the City of Chicago of homogenized milk which by its very definition has no cream line eliminates the absence of a cream line as a proper ground of prohibiting paper containers.

Pacific States Box & Basket Co. v. *White,* 296 U. S. 176 (1935), cited by the City at page 67 of its Brief, has no relation to this item of transparency of milk bottles. The case of *Koy* v. *City of Chicago,* 263 Ill. 122, cited by the City on page 68 of its Brief, holding that

laws may provide the manner in which purity, wholesomeness and freedom from disease shall be secured and "made to appear" does not warrant the city's compelling transparent bottles in order to show a cream line when the sovereign state has approved single-service containers and has approved homogenized milk that never shows a cream line. The wholesomeness of respondent's milk is not questioned. If the fact that the container used by respondent does not show the cream line had any merit as a defense to this suit the Board of Health of the City of Chicago would not have recommended the use of paper milk bottles (R. 1698).

Presumption of Legislative Correctness.

[Answer to Petitioners' Brief, pp. 69-70.]

The comment of the Circuit Court of Appeals (R. 1794) that in the nature of things the City Council could not in 1935 actually have considered and weighed the advantages and disadvantages of paper milk bottles is entirely true, if viewed realistically. The technical argument of the petitioners is that in theory the presumption of correctness of the City Council's action attached in 1935 and "is not impaired by advancing age" (Petitioners' Brief, p. 70).

The admission by the petitioners (p. 70) that the reasonableness of the ordinance is to be tested at the time of an attack on it makes it unnecessary to determine just what weight is to be given in 1939, at the time of the decision of this case, to the action of the City Council in 1935. In the meantime the state legislature had approved single-service containers and, as stated under Point II, above, any presumption of legislative correctness which is to be applied in this case is one arising

from the action of the state legislature rather than from the action of the City Council.

The Circuit Court of Appeals correctly held that the action of the state legislature approving single-service containers made the city's attempted prohibition of single-service containers unreasonable as a matter of fact. Our argument on this question is found under Point II.

Use of Single Service Containers Throughout the United States.

[Answer to Petitioners' Brief, pp. 70-74.]

On the question of reasonableness, the experience of other municipalities was competent and persuasive in showing widespread use of paper bottles without injury to public health and in proving that the paper bottle was "standard". The trial judge properly accepted it for those purposes.

Under this heading, petitioners (p. 70) refer *inter alia* to the use of single-service paper milk bottles in the cities of Evanston and Winnetka. The experience of the City of Evanston in testing the respondent's milk and the paper bottle weekly showed that the bacteria count on quart containers "was very consistent with any of the other dairies putting out milk in bottles" (R. 675). The experience of the health department of the City of Evanston was such that it was never deemed necessary to go to the paper mills or fabrication plants for inspection purposes. If further and more severe tests than the rinse test were needed, the disintegration tests would be resorted to (R. 675). Paper bottles were investigated thoroughly for three years, and three to four hundred tests made before use of the paper bottles was permitted (R. 679-683). Evanston has and is enforcing the United

States Public Health Service model milk ordinance (R. 677-678, 683). No complaint ever existed in Evanston calling for supervision of the use of the paper bottle (R. 686); and the experience in Evanston showed that the bacteria count on glass bottles used for milk was higher than the bacteria count on paper milk bottles (R. 686-687).

Concerning the Village of Winnetka it should be understood that Dr. H. A. Orvis also supervises the control of milk for Highland Park, Lake Forest, Lake Bluff, Glencoe and Kenilworth by a contract between these municipalities and Winnetka (R. 567). They all operated under the model ordinance of the U. S. Public Health Service and had a rating of 96% from this body for the work performed. They have all used single-service paper milk containers since November, 1938 (R. 569). They interpreted the model ordinance as permitting these containers (R. 573-574). Bacteriological control of paper bottles equalled that of glass bottles (R. 585). The Illinois Department of Public Health rated the laboratory procedures employed in these municipalities at 100% and gave a total rating of 96.7 on all procedures employed (R. 577). Dr. Jordan, who sent monthly reports on the bacteria content of paper board as revealed by disintegration tests, was connected with the research department of the American Public Health Association (R. 583).

The daily sale of milk in single-service paper containers in Chicago by restaurants and drug stores was not prohibited or interfered with by the City or its Board of Health at any time (R. 940). This fact is not denied by any evidence or exhibit of petitioners. Exhibit 26 of petitioners (R. 1697) does not destroy the probative value of the evidence that milk actually is served in

paper containers in Chicago drug stores and restaurants. There is no evidence in the record that the use of paper containers in the City of Chicago by restaurants and hotels in the sale of milk has caused any damage to public health or has at any time ever been suspected of spreading disease.

Dr. Arnold testified that he had made no comparative bacterial tests on milk in glass and in paper (R. 1119), had no statistics that the bacterial count in paper was higher than in glass (R. 1120), did not know and had not investigated how many single service milk containers were used daily in the United States (R. 1134-1135), testified that the Board of Health had made no disintegration tests on milk container paper board (R. 1148), that he did not know whether paper milk bottles were used on trains or airplanes and never investigated that (R. 1165-1166), that he had never performed experiments to determine the amount of "chip" (reused stock) in paper board (Rec. 1168-1169), that he had never performed experiments on the harmfulness of acids in paraffin, although he had said that it was a health problem (R. 1177), that he never performed experiments on adhesives in Pure-Pak containers (R. 1179), that he had never performed experiments to see whether metal from printing ink got in the milk, although he had said this was a health problem (the City has wisely abandoned that contention) (R. 1181), that lead poisoning was a hazard although he had made no experiments and had no statistics (R. 1184), and that he never made any tests for the effect of respiratory secretions (R. 1190).

But Dr. Arnold was asked (R. 1166):

> "Doctor, if the control of milk is an ever-changing problem, as you testified on direct examination [R. 1066], is not the experience of public health authori-

ties throughout the country—and I am referring to public health authorities of cities—to be considered in determining whether or not the paper container presents a public health hazard?

"Dr. Arnold: Yes, possibly it is, yes.

"Q. But you made no investigation?

"A. No, sir."

This testimony from the chief witness for the City who also attended and counselled the petitioners' attorneys at all hearings and depositions (R. 1106-1107), is ample justification for the trial judge's refusal to ignore years of use and country-wide experience. The trial court in appraising the evidence tersely concluded that "experience is more persuasive than the theory of experts".

Dr. Paul H. Tracy testified that the Pure-Pak machine was used successfully at the model dairy of the University of Illinois College of Agriculture, which supplies the University Hospital and a regular milk route as part of the training of its students and of the researches of its professors (R. 503, 510, 526).

There is also evidence that the Pure-Pak container is being used in 481 separate municipalities, including the principal cities of the country as follows (R. 889-890):

Washington, D. C.,
New York City,
Philadelphia,
Baltimore,
Dayton, O.,
Indianapolis,
Detroit,
Minneapolis,
Seattle, Wash.,
Los Angeles,
San Francisco,
Oakland, Calif.,
Phoenix, Ariz.,
Flint, Mich., and
Louisville, Ky.

Approximately three or four hundred thousand Pure-Pak containers were being sold daily at the time of the trial (R. 890). [This figure is much larger now.]

The stipulation naming 68 municipalities in metropolitan Chicago which had been using this container for more than a year at the time of trial is set forth in the record (R. 692).

Dr. J. R. Sanborn testified (R. 38-40) that he had personal knowledge that the paper container was being used in New York City; forty cities and towns in the vicinity of New York City; Boston, Mass.; numerous cities and towns around Boston, such as Quincy, Cambridge, Somerville; and that it was being used in Baltimore, Philadelphia, Washington, D. C.; Detroit and Flint, Michigan; Duluth, Minnesota; Dayton, Ohio and Toledo, Ohio. He also testified that 40 or 50 cities and towns in Canada are using single service containers; Toronto, Hamilton, Sarnia, Peterborough and Guelph included (R. 153).

Mr. A. E. Carpenter of Sylvan Seal Milk, Inc., Philadelphia, which has a plant in Philadelphia using three Ex-Cell-O Pure-Pak machines and a plant in Baltimore using one such machine, testified by deposition that they deliver milk every day in the year except Sundays out of the Philadelphia plant to the Philadelphia area—including the City of Philadelphia, Trenton, N. J., Camden, N. J., Atlantic City, N. J., Wilmington, Del., and west of Philadelphia for about fifty miles to a great many towns (R. 1386) and that the Philadelphia plant alone is subject to the jurisdiction of 55 different health officers (R. 1390). Out of the Baltimore plant, Sylvan Seal Milk delivers milk to Baltimore and the City of Washington and also towns between Baltimore and Washington (R.

1386). The Philadelphia plant has a capacity of 120,000 quarts per day and this company has sold hundreds of thousands of quarts of milk in Pure-Pak containers (R. 1387). No complaints of absorption by the containers were received from any health authorities or customers (R. 1393).

All of the municipalities served by Sylvan Seal are ones which "certainly do", according to Mr. Carpenter, regulate the inspection, sanitation and handling of liquid milk and cream through their health departments (R. 1389), and they have approved the sale of milk in Pure-Pak containers (R. 1390).

Mr. Carpenter identified photographic copies, which are offered in evidence with his deposition, of letters from health authorities under which his company is doing business and identified the facsimiles as accurate and testified that he had seen the originals which were in possession of his company and that they were signed by those health officers (R. 1390-1391). None of these officers issued any other permits than the letters (R. 1391).

We shall not encumber this brief with all of these letters, but relevant excerpts are here set forth, because they have not previously been called to the Court's attention:

Plaintiff's Exhibit 5 (R. 1471):

From Herbert M. Packer, Chief Division of Housing and Sanitation, Bureau of Health, Philadelphia, Pa., November 27, 1936:

> "In reply to your query of November 23, regarding the use of paper milk bottles in the City of Philadelphia, we have found that they have complied with all the sanitary laws of this City, and

from an inspection which I, personally, made of your plant, I believe they are most decidedly a progressive step in the sanitary handling of milk."

Plaintiff's Exhibit 6 (R. 1471):

From Dennis J. Sullivan, Deputy Health Officer, Department of Health, Jersey City, N. J., November 28, 1936:

"Answering your second question first, this department does not object to distribution of milk in paper containers provided the containers are paraffined in the plant where they are filled and just prior to filling.

"Milk has been distributed in paper containers in Jersey City by four large milk companies for over a year, we see nothing objectionable about this method of distribution and apparently it is satisfactory to the consumer."

Plaintiff's Exhibit 7 (R. 1472):

From John C. Foote, Milk Inspector, Board of Health, Wilmington, Del., November 30, 1936:

"In answer to your phone call of November 27th in reference to our finding of paper containers.

"I want to say that they are without a doubt the best in our city, from a bacteria count they are almost 100%. I have never picked up a sample over 3,000 bacteria since they have been coming into our city, and I have visited your plant and find it complying with all our rules and regulations from a health standpoint.

"P. S. As you know I was opposed to the containers when they first made their appearance but after giving them a fair trial here, I will say they are a perfect container and will be a credit to any community."

Plaintiff's Exhibit 8 (R. 1473):

From W. K. Moffett, Director, Bureau of Milk Sanitation, Department of Health, Commonwealth of Pennsylvania, Harrisburg, Dec. 1, 1936:

"The Pennsylvania Department of Health has for a long time approved the use of paper containers for milk distribution. This includes the paper container which is made in the factory and paraffined before shipment to the milk plant in a sealed package, and the paper container made completely in the milk plant and subjected to a bath of hot paraffin just before filling. We think this latter bottle furnishes a container for milk which more nearly meets our standards for a sterile milk container than does the glass bottle put through the average soaker type washer where it has been subjected to an alkaline treatment and later a steam or hot water treatment.

"We have not been satisfied with the condition of the average glass bottle as it comes from a soaker type washer. It has been our experience that it is difficult to get a complete job of sterilization of the glass container due to the mechanical failures of the machine; the maintenance of the proper water temperature and the fact that the glass container has gone through an alkaline solution which, because of not being changed frequently may be a source of contamination rather than a cleansing agent. We feel so strongly on this subject that we contemplate adding a last rinse with chlorinated water.

"Supervision of the milk supply is much easier from a health standpoint where a paper container is in use than with a glass container. We also like the idea of the paper being used once and then destroyed. A glass container lends itself so easily to so many uses other than that of a container for milk and so often gets back to the milk plant in such bad condition that sterilization is such a difficult job that we would welcome the extension of the use of a paper container more generally."

Plaintiff's Exhibit 10 (R. 1474):

From Dr. George W. Grim, Milk Control Officer, Milk Control District No. 1, Associated Suburban Boards of Health, Ardmore, Pa., Dec. 2, 1936:

> "In response to your recent inquiry, please be advised that I am satisfied that the Silver Seal Dairies [Note: This is the prior corporate name of Sylvan Seal Milk, Inc.] have met substantially all of the requirements for the production, processing, distribution and sale of milk and cream in this District and have continued to do so. I particularly favor the use of the single service container for milk distribution. The difficulties we encounter in washing glass bottles are such that I doubt that they will ever be fully overcome."

If any such dire results as Dr. Arnold intimated would result from the use of paper containers, these other cities would have found it out long ago. These cities are comparable to Chicago. Chicago is neither any dirtier a place than they, nor are her problems of milk distribution any different in substance than theirs.

Every danger which the City pretends to fear from the use of paper containers is answered by the successful practical experience of cities of this country and Canada in using such containers.

In an effort to escape the force of the competent and convincing evidence produced as to the daily successful use of paper containers for milk elsewhere, petitioners say that they declined to accept the proffered issue and to introduce testimony as to prohibition in municipalities other than Chicago. The only answer to this is that there was no such evidence to offer. If it existed, petitioners would have brought it forth and they would have proven every prohibition or unsuccessful experience to justify their position. Not being able to meet this issue, peti-

tioners objected vigorously to the evidence and talked about peculiar local conditions in Chicago. What condition is peculiar to Chicago that makes experience elsewhere non-persuasive? The record is entirely silent.

Petitioners ask the Court to disregard the evidence. The Court is asked to ignore what the common man knows about paper containers and to accept instead theoretical objections which did not deter the state legislature from approving them.

Argument as to "future health hazards" from the use of paper containers is contradicted by the evidence in the record. Petitioners do not point to a single fact indicating any possibility of an outbreak of amoebic dysentery or any other disease because of the paper bottle. We concede that prevention is better than cure, but epidemics do not occur without cause and in the absence of any evidence whatever that paper containers have, could or might cause an epidemic, the Court need not guess or surmise that they will.

We have already referred to the fact that the rule in Illinois is that an ordinance enacted under a general grant of power from the state legislature may be set aside upon judicial review if it is so unreasonable "that there can be no question about it". No one isolated bit of evidence or type of evidence would satisfy that requirement, but obviously if experience had shown single-service containers to be dangerous elsewhere that would be relevant in determining that the city council of the City of Chicago was not acting unreasonably in prohibiting them. That being true, evidence of successful use elsewhere is competent and relevant in determining whether the city council of the City of Chicago is acting reasonably in rejecting not only the approval of the common man of paper containers for food, but also the specific successful

experience of other municipalities with single-service containers for milk.

The facts referred to in the quotation from *Standard Oil Co.* v. *City of Marysville*, 279 U. S. 582 (1928), show the question there under consideration to be debatable. If the announcement that "we may not test in the balances of judicial review the weight and sufficiency of the facts to sustain the conclusion of the legislative body" is accepted as meaning that the court may not determine whether an ordinance of the City of Chicago is reasonable, then the case does not announce the Illinois rule which governs here and which has already been sufficiently set forth to furnish a ground of decision.

Regulation of Paper Milk Containers by the State of Illinois.

[Answering Petitioners' Brief, p. 74.]

Petitioners contend that the recognition of the use of paper milk containers by the State of Illinois "is merely another instance of their use elsewhere". An examination of Point II of our argument, above, will indicate our entire disagreement with any such theory. We think that the approval by the state legislature and its department of health is not only material but conclusive as to the unreasonableness of the city's action when it is considered that the city is a creature of the state.

Regulation of Paper Milk Containers in the Model Ordinance of the United States Public Health Service.

[Answering Petitioners' Brief, pp. 74-76.]

In determining the reasonableness of the Chicago ordinance the fact that the United States Public Health Service has approved single-service containers is properly a mat-

ter of notice. The argument that the Model Ordinance and regulations (R. 1699-1704) of the United States Public Health Service compel each municipality which permits single-service containers to inspect paper mills and fabrication plants is not borne out by the regulations themselves. We have already shown, in answering pages 56-66, of the Petitioners' Brief that tests which can be made within the municipality of the sanitary properties of the paper bottles to be used there are adequate to determine and control the sanitation of paper milk bottles just as effectively as the sanitation of glass bottles is controlled.

The City of Chicago has found no occasion to inspect mills or fabricating plants since the injunction was entered in the present case in October, 1940, and it has voluntarily permitted the use of paper containers not protected by such injunction without inspecting paper mills or fabricating plants and without there being the slightest intimation of detriment to the public welfare.

Use of Paper Containers for Other Purposes.

[Answering Petitioners' Brief, p. 77.]

The contention of petitioners (p. 77) that the use made of other paper containers in the city is not comparable to respondent's container is challenged and denied. The universal acceptance of paraffined paper containers for liquid and solid foods of all kinds cannot be explained away by pointing out superficial distinctions between milk and such other foods. Furthermore, at the time of the trial, milk was sold daily in the City of Chicago in paper cartons called "carry out service" cartons (R. 1482). Petitioners say that a Board of Health regulation (Petitioners' Exhibit 26; R. 1697) illegalizes this common practice known to everyone. But since the Board of Health

has made no effort to prevent such practice, its conduct amounts in effect to an approval of these carry-out containers as "sanitary dispensers", under the proviso of Section 3094 (R. 108-109).

The fact, if it be a fact, that the sale of milk and milk products by soda fountains and restaurants in the City of Chicago in paper containers is a violation of some Board of Health regulation does not detract from the persuasive force of the evidence as proving that there is no danger to the public health from such consumption of milk in paper containers.

The use of paraffin paper and paraffin paper board is so universally accepted as sanitary by the common man based on his experience that the attempt on the part of the city council of the City of Chicago to prohibit its use at this date is palpably arbitrary and unreasonable. The question is not made debatable by the mere fact that the attorneys for the City of Chicago do debate it.

The Proposal by the Board of Health that the City Council Permit the Use of Paper Containers.

[Answering Petitioners' Brief, p. 78.]

The Board of Health of the City of Chicago is charged by law with the enforcement of the health ordinances and is presumably composed of experts whose opinions on a question of fact would be entitled to great weight as an administrative determination of such question. Petitioners concede that during the pendency of this suit the Board of Health recommended the approval of single-service containers by the adoption of the model ordinance and regulations of the United States Public Health Service, and the only answer to this recommendation which the petitioners offer in this Court is that the regulations

require inspection trips to mills and fabricating plants which we have already discussed and shown to be unsound when viewed practically rather than theoretically.

The Conclusion on the Question of Reasonableness.

Petitioners have argued the question of reasonableness by dividing their arguments into numerous branches and saying that no single feature of this case proves the unreasonableness of the city council's action. We submit that in determining the question of reasonableness no single bit of evidence should be singled out as determinative. The question on this branch of the case is whether taking all of the evidence the respondent has so established the fact that its paper milk bottle is such a "known, wholesome article" that under the Illinois decisions the city council has no right to prohibit it.

If the petitioners are correct in saying that the Circuit Court of Appeals did reach the conclusion that the ordinance was unreasonable and invalid, we believe that such finding is amply sustained by the grounds referred to in the majority opinion. The following considerations lead clearly to ~~the~~ conclusion that the ordinance is unreasonable:

(a) Widespread use of paper generally for food products;

(b) The approval of single-service containers by the state legislature of Illinois;

(c) Approval of single-service containers by the director of the Department of Health of the State of Illinois;

(d) Approval of single-service containers by the United States Public Health Service;

(e) Approval of single-service containers by the Chicago Board of Health;

(f) Widespread and favorable use over a period of many years of single-service containers in cities comparable in size to the City of Chicago;

(g) Favorable use of single-service containers in the metropolitan Chicago area outside of Chicago after November 1938;

(h) The favorable and overwhelming opinion of experts from the University of Illinois and the New York State Agricultural Experiment Station.

To these favorable elements may now be added: Continued, successful use in practically every large city in the country, including the City of Chicago, and widespread use in army training camps.

If the evidence in the record and the facts of which the Court should take judicial notice are not sufficient to justify the finding of the trial court that the ordinance was invalid if construed to prohibit paper containers, then it is difficult to conceive of any case in which the Court would be justified in finding that the city council's action was "palpably arbitrary and unreasonable."

IV.

The Respondent's Single Service Container Is a "Standard Milk Bottle."

The District Court held that the respondent's single service container is a "standard milk bottle" within the meaning of the ordinance (R. 1756).

That the respondent's single service container is a "milk bottle" was apparent to the trial judge. He said (R. 1753):

> "The Court has no difficulty in holding that plaintiff's single service container offered and admitted in evidence in this case is a 'milk bottle' within the meaning of the ordinance. The definition of the word 'bottle' given by practically all lexicographers, as well as the meaning of the word as used in common speech, shows that the word has no limited and restricted meaning. It is a word of broad and extensive connotation. Webster's new International Dictionary states, among other things, that the word 'bottle is now so loosely used that its limit of application is not well-defined.'"

The trial court discussed the use of the word "bottle" in common speech, the accepted dictionary definitions of the word, the various types of containers that, historically, had been included within the connotation of the word, and concluded that there was no requirement that, as the petitioners contended, a milk bottle should be made of glass (R. 1753).

In discussing the word "standard" as used in the phrase "standard milk bottle" the Court pointed out that it was not confined to any local construction that might be placed upon the word, but might resort to the type or model which is recognized generally in the industry. In

particular, the Court placed its decision (R. 1755) of this aspect of the case on the sound ground that *"The ordinance is not static. The words are general and continuing in their operation. The ordinance must be construed in the light of new and changing conditions and current thought and practice. If, in the course of time, the advancement of science has produced a container which serves the same purpose as a glass container, and if the product delivered therein conforms to the requirements of sanitation prescribed by the health ordinances, then the ordinance must be given such construction as to permit the use of the later developed scientific container."*

It was urged by the City in the Circuit Court of Appeals that the construction of the phrase "standard milk bottle" by the District Court to include plaintiff's single service container was erroneous for the reason that this type of container was not in use at the time of the enactment of the ordinance in question, and the phrase "standard milk bottle" must be interpreted to include only such container or containers as the City Council might have been familiar with, or which were in use, on the date of the enactment of the ordinance. The Circuit Court of Appeals sustained this contention of the City and held that the construction placed upon the phrase by the District Court was untenable, that the words in legal sense could be interpreted only to permit the type of container that was a "standard milk bottle" when the ordinance was enacted, and that the glass bottle in use in the City of Chicago for delivery of milk at that time was the only receptacle contemplated or permitted by the ordinance. The Circuit Court of Appeals said (R. 1786):

> "Thus the theory of construction advanced by the plaintiff, apparently followed by the District Court, to the effect that the words 'standard milk bottle'

should be interpreted in accordance with the meaning of those words at the time of trial rather than their meaning at the time the ordinance was enacted, is not tenable. The recognition of such a theory would, in effect, impose legislative functions upon the courts. It would mean that a legislative enactment might mean one thing today and something else tomorrow. Changed conditions, of course, may make advisable a repeal or modification of existing legislation, but if so, the appeal should be to the legislature and not the courts."

As support for this view the Court cited the case of *People v. Barnett*, 319 Ill. 403 (1926), which does seem to hold that the words of a statute are to be construed in accordance with their meaning *at the time used rather than by a meaning subsequently acquired or given them.* However, since the decision of that case fifteen years ago, the question whether the meaning of a word or phrase as used in a legislative enactment may be extended to include within its scope a signification not present in the mind of the legislature at the time of such enactment has been definitely answered by the Supreme Court of Illinois in the affirmative. In *City of Chicago v. Bert Alpert, Inc.*, 368 Ill. 282 (1938)—a case not cited to the Circuit Court of Appeals—the Illinois Supreme Court held that "garages" as used in a state statute in 1911 included (*as present counsel for the City of Chicago contended*) vacant lots, called parking lots, which were not known at the time of the enactment of the statute. Even though the word "garage" meant an enclosed structure or building to the legislature in 1911 when the statute was passed, the Court said (p. 286):

"The General Assembly, in the quoted delegation of power, *did not define 'garages' thereby limiting the authority delegated by making the word 'garages' a static or dormant concept* rendering cities impotent

> to cope with the everchanging conditions of a mobile and complex society. In short, cities and villages are not restricted, in directing the location and regulating the use and construction of garages, to such premises as may have conformed to the accepted popular definition of the word 'garage' in 1911, when it was incorporated in the statute. Conditions attending the storage and parking of automobiles in metropolitan areas today are vastly different from those prevailing a quarter of a century ago when the State empowered cities to regulate and license garages. It is common knowledge that in cities considerable areas are devoted to parking and storing motor vehicles. Casual observation will disclose that in some instances the premises are denominated parking lots and, in others, outdoor or open-air garages. We are not required to be insensible to this mode of transacting an important part of the automobile business. The express power to regulate the use and construction of garages is sufficiently comprehensive to authorize cities and villages to license open-air as well as closed public garages. A legitimate exercise of this power is immune from constitutional assault." (Italics ours.)

The holding of the Circuit Court of Appeals that the language of the ordinance is to be interpreted as it was used by the City Council in 1935 was due to our failure to cite this decision in our brief in that Court. Contrary to the dictum in the earlier case of *People* v. *Barnett*, 319 Ill. 403 (1926) the later case is a controlling adjudication by the Supreme Court of Illinois which establishes that legislative language as used in an ordinance is dynamic, not static.

If a vacant lot used for parking automobiles is a "garage" within the meaning of a statute passed in 1911, then there is nothing incongruous in holding a paper milk bottle in 1939 to be a "standard milk bottle" as that term was used in 1935. It will be noticed that counsel for the City of Chicago were arguing for the dynamic interpreta-

tion of legislative language in the *Alpert* case, because that would sustain the claim of power to regulate open parking lots on the theory that they were "garages", whereas here they reverse their position and contend that legislative language must have a static, unchanging meaning.

Quite aside from the well-reasoned authority of the *Alpert* case, it would seem that the rule of construction there approved is highly desirable since it renders possible the prompt acceptance of improvements in a changing society. Law ought not to lag behind other sciences but should be sufficiently flexible to meet new conditions in all fields of industry.

The decision of the Indiana Supreme Court in *Uservo, Inc.* v. *Selking*, 217 Ind. 567, 28 N. E. (2d) 61 (1940), clearly supports our contention that the undefined phrase in the ordinance, "standard milk bottle" is a general phrase including all containers commonly used in selling milk (R. 1483, 1493, 1495). In that case the Court refused to hold the defendant liable for contempt for an alleged violation of a mandatory decree requiring delivery of a "standard milk bottle" because the decree there, like the ordinance here, did not define what a standard milk bottle was. The trial court there heard much evidence on the subject of what was a standard milk bottle, and in discharging the defendant who returned what he contended was a "standard milk bottle", the court at page 63 said:

> *"It will be noted in this case that the phrase, 'standard bottles', is not defined in the order. There seems to be no universal or well defined meaning of what does or does not constitute a standard milk bottle.* It was contended with much vigor in this case what might be a standard bottle in one city in Indiana might not be regarded a standard bottle in another. Much testimony was heard by the court concerning this subject. As was pointed out in the New

Jersey case, last above cited [*Bayer* v. *Brotherhood of Painters*, 108 N. J. Eq. 257, 154 A. 759], the appellee is not without remedy. If the order (assuming that the order is valid) is indefinite and ambiguous, a motion to modify and make more definite would be available to her." (Italics ours.)

Further, *Webster's New International Dictionary*, 2nd Ed. (Unabridged, 1937) states:

"* * * Bottle is now so loosely used that its limit of application is not well defined; it is generally distinguished from such vessels as jug or demijohn."

And *Century Dictionary and Cyclopedia* also defines it as:

"A hollow mouthed vessel of glass, wood, leather or other material for holding and carrying liquids. * * *"

Funk and Waynalls' New Standard Dictionary defines it as:

"A vessel for holding, carrying or pouring liquids having a neck and narrow mouth that can be stopped and specif: * * * any of various receptacles serving as a bottle."

It is apparent that respondent's bottle, today commonly used and referred to in the City of Chicago, Washington, D. C., and hundreds of other cities and villages as a "paper milk bottle", fits these definitions, and, as found by the trial court (R. 1752-56), is a "standard milk bottle" within the meaning of "standard" and "bottle".

In ascertaining the correct meaning of the words "standard milk bottle" we should not attribute to the City Council of the City of Chicago, the assumption that there would be no improvement ever made by science in developing milk containers. If a building ordinance required the use of "standard wallboard" or "standard

brick", no one would contend that only wallboard or bricks which were known and manufactured at the time of the ordinance could be used under such an ordinance. The very failure of the City Council to define the term "standard milk bottle" is an indication that it was to be given a broad meaning. Certainly the fact that a particular type of "standard milk bottle" was then generally accepted is no reason for assuming that in the future, when other standard milk bottles had been generally accepted in the industry such later standard milk bottles would be excluded. In a changing civilization it cannot be assumed that the legislature intends that things shall stand still. The law must be dynamic and not static. The shapes of glass milk bottles have varied from time to time, but no one has argued that they cease to be "standard" because shapes have changed.

We therefore respectfully submit that the question in this case is not what was meant by a "standard milk bottle" precisely at the time the ordinance was adopted, but what is meant by "standard milk bottle" at the time the ordinance is being enforced.

The evidence shows without contradiction that cities operating as is the City of Chicago, under the United States Public Health Service Model Milk Ordinance, from which the term "standard milk bottle" is taken, have, without amending their ordinances, construed it as did the trial court, so as to include single service containers (Oryis, R. 574).

In the mimeographed copy (January, 1939) of the United States Public Health Service Model Ordinance, Section 10, (which corresponds to Section 3094 of the Chicago ordinance), required "standard milk bottles", (Krueger, R. 993-994, Deft's Ex. 16, R. 1677) but, as admitted by the witness Krueger (R. 983, 995) the Code ac-

companying it contained items 12-p and 15-p, which were as follows:

Item 12-p:

> "All milk and milk products, containers and equipment, except *single-service containers*, shall be thoroughly cleaned after each usage. All containers shall be subjected to an approved bactericidal process after each cleaning and all equipment immediately before each usage. When empty and before being returned to a producer by a milk plant each container shall be effectively cleaned and subjected to bactericidal treatment."

Item 15-p:

> "Milk bottle caps or cap stock, parchment paper for milk cans, and *single-service containers* shall be purchased and stored only in sanitary tubes and cartons, respectively, and shall be kept therein in a clean, dry place." (Italics ours.)

Thus we find municipalities, and even the United States Public Health Service itself, construing the term "standard milk bottles" as including paper single service containers. The amendment to section 10 of the model ordinance, adding "or in single service containers", was made in June, 1939, after the contention of the City of Chicago that single-service containers were *not* standard bottles, was widely known (Krueger, R. 994-995, Deft's Ex. 17, R. 1678).

Clearly, the learned trial judge was correct in holding that "plaintiff's single service paper containers, as offered and admitted in evidence, are 'standard milk bottles within the meaning of the ordinance'" (R. 1755-56).

The Circuit Court of Appeals in its opinion referred to certain instances in which distinctive terms were used in the testimony and in correspondence distinguishing between glass milk bottles and paper containers. Since

this entire controversy revolves around differences between glass milk bottles and paper milk bottles it is not at all strange that the descriptive terms used in the course of the controversy to describe glass bottles and paper bottles should have differentiated between them. In considering the weight given to this evidence by the Circuit Court of Appeals, it should be remembered that that court was deciding whether the term "standard milk bottle" when used in the year 1935 included a paper milk bottle. We submit that under the *Alpert* case discussed in this subdivision of our brief, the meaning of the term in 1940 and not its meaning in 1935 was the ultimate fact to be reviewed by the Circuit Court of Appeals. The District Court had decided that the term "standard milk bottle" did reasonably include a paper milk container in October, 1940, when the District Court decree was entered. Since the reasoning by which the trial court reached that result is sustained by the doctrine of the *Alpert* case—that undefined general language is to be given the meaning which from time to time it acquires—the finding of the District Court on this issue should be affirmed.

The approval of single service containers by the Illinois legislature and the voluntary action of the City of Chicago since October, 1940, in permitting the use of containers not protected by the decree in the present case should indicate to this Court that no actual health hazard is involved, but that the questions to be decided are mere legal questions. The trial court found expressly that single service containers present no health hazard, the Circuit Court of Appeals denied a supersedeas to stay the operation of the trial court's injunction, and the majority opinion of the Circuit Court of Appeals indicates its agreement with the District Court that these

containers present no health hazard. An application of the rule invariably applied by this Court that it will not disturb the finding of fact approved by a District Court and the Circuit Court of Appeals rebuts any contrary argument of the petitioners. In addition, the record itself abundantly sustains the proposition that paper milk bottles present no health hazard.

V. Conclusion.

Without repeating the evidence on the issues in this case, we do desire to summarize in a way not hereinbefore presented some of the respects in which the Pure-Pak paper milk bottle is superior to the glass milk bottle.

Not only does the Pure-Pak single service container have merit in the sense that it has not created any health hazard, but it also has a tremendous affirmative health advantage over a glass milk bottle, all of which must be considered in determining whether the City of Chicago is acting reasonably in excluding this paper bottle from the Chicago market, especially when the Board of Health in charge of enforcing the ordinance and protecting the public health of the city approves, and by its official action, recommends its use.

First: The Pure-Pak container is used only once. This eliminates all danger of the bottle itself contaminating anyone else, eliminates the hazard of possible human or mechanical failure in washing to which the multi-service container is subjected, and is of great usefulness in hospitals, particularly isolation sections for contagious diseases, where concededly sometimes cross-contamination occurs.

Second: Immediately before being filled and after the Pure-Pak container has had its last manual handling (being handled on the outside edges only) the container goes into a hot paraffin bath which concededly has *some* bactericidal effect. The amount of this bactericidal effect is not so important as the fact that concededly it has some effect which is distinctly helpful from a public health standpoint.

Third: The container is tamper proof. The contents cannot be removed without tearing open the pouring spout

or defacing beyond replacement the wire staple. Each paper container bears printed or indelibly stamped upon it the date it is to be sold and there can be no transferring of the contents from one container to another or no "switching" of milk bottle caps such as may occur in the case of the ordinary glass bottle with a plug cap, with or without an unlocked "hood." That this feature of Pure-Pak containers prevents a definite evil is indicated by the "public health reason" of the Chicago Board of Health appended to Section 3094 of the ordinance (R. 109):

> "Another practice on the part of some distributors is the filling of returned bottles along the milk route, particularly at retail depots. This item expressly forbids this practice."

Fourth: And second only to the single service feature of the container in importance, the pouring lip over which the milk or cream passes after the pouring spout has been opened is tightly sealed at all times from the moment that the side-seam of the flat-blank is mechanically sealed at the converting plant until the customer himself tears open the pouring spout. At all times, therefore, that part of the container over which the contents flow is sealed against contamination, even in the dairy itself. Compare this with the ordinary glass milk bottle whose pouring lip projects upward at a place where contamination is most likely to occur—this being the very point, and the only point, over which the contents of the glass bottle invariably flow.

Fifth: The Ex-Cell-O Pure-Pak machine which fills the containers is operated by two persons instead of the three needed in a typical glass bottle dairy with a ratable reduction in the hazard from human contamination.

Sixth: After flat blanks are taken from the sealed packages and placed upon the machine by the operator, who for this purpose grasps them on the outside edges, the filling operation is in a covered machine and the paper bottle is not again touched until it has been formed, the bottom flaps sealed, the whole bottle paraffined, automatically filled, closed and stapled and inspected by the use of a light behind the passing line of bottles. Contrast this with a line of empty glass milk bottles travelling from the washing department to the filling department, subject to all of the bacterial contamination that may be in the air of the dairy as well as to the possibility of human contamination. (For a good comparison between paper and glass operations, see Tonney, R. 903-911).

Seventh: The filling operation takes less time after the container is last touched by hands until the operation is completed than in the case of the glass bottle. The less time taken in the filling operation, of course, the less opportunity for contamination in that process.

Eighth: The bottom of the Pure-Pak paper bottle is square so that a number of them tightly packed together prevent the circulation of warm air and thereby more easily keep the contents cool, an extremely important health feature in view of the effect of low temperature in preventing the multiplication of bacteria in milk.

Ninth: Paper is a better insulator against heat than glass so for that additional reason it is easier to keep cool the milk in such containers than in glass containers.

Tenth: The shape, weight and size of the corrugated cartons into which the paper bottles are placed at the dairy for distribution lend themselves ideally to refrigeration in the truck and encourage adequate refrigeration. Compare this with an open crate of glass milk

bottles. From a health standpoint, the low bacteria count of the milk when it is delivered to the consumer is the object sought and paper bottles best attain that end.

Eleventh: There is no danger of glass breaking and cutting anyone.

Twelfth: There is no danger of glass from this or other broken bottles getting into the milk.

Thirteenth: Owing to the facts that the containers to be filled are shipped direct from the factory and need not be transported from the stores or customers and that the containers when filled are lighter and more compact and more easily kept cool en route than glass bottles in crates, the pasteurizing and bottling of the milk in paper bottles can be done economically right in the dairy region, reducing the time between "cow and consumer." This reduces the opportunity for bacteria to multiply, because multiplication of bacteria depends upon time and temperature. The milk stays fresh longer in the hands of the customer.

Other considerations of present national policy in conserving automobile tires and manpower are promoted by paper milk bottles, as follows:

Fourteenth: Milk delivered in paper milk bottles saves man power by increasing store sales and cutting down on house-to-house deliveries. The convenience, light weight and lack of danger of breakage induces the customer to carry the milk from the store rather than having it delivered to his door.

Fifteenth: Paper bottles filled with milk weigh less than half as much as a similar quantity of filled glass bottles. This lighter weight and the improved method of distribution which such lighter weight makes possible result in the saving not only of labor but of trucks, rub-

ber tires, gasoline and wear and tear on streets and highways for the reasons that:

(a) Wholesale deliveries to stores rather than retail delivery from house to house is promoted as stated in the next preceding paragraph;

(b) Each delivery truck can carry a great deal more milk than in glass containers without increasing the total weight of the load;

(c) There is no heavy return load of crates and bottles as in the glass bottle operation.

For the reasons stated, we submit that the judgment of the Circuit Court of Appeals should be affirmed.

Respectfully submitted,

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OWEN RALL,
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JOHN SPALDING,
1 North La Salle Street, Chicago, Illinois;
Attorneys for Respondent.

March 3, 1942.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

MOTION OF PETITIONERS FOR LEAVE TO FILE A REPLY TO ADDITIONAL SUGGESTIONS FILED BY AMICUS CURIAE.

BARNET HODES,
Corporation Counsel of the City of Chicago,
511 City Hall, Chicago, Illinois.
Attorney for Petitioners.

JAMES A. VELDE,
Assistant Corporation Counsel,
WALTER V. SCHAEFER,
Of Counsel.

CHAMPLIN-SHEALY COMPANY, CHICAGO 365

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

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CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

MOTION OF PETITIONERS FOR LEAVE TO FILE A REPLY TO ADDITIONAL SUGGESTIONS FILED BY AMICUS CURIAE.

During the oral argument of the above-entitled cause on March 31, 1942, Mr. Justice Reed requested the attorney general of the State of Illinois, who appeared as *amicus curiae,* to file a memorandum of authority. Counsel for petitioners were not informed until April 2 that the attorney general had filed a memorandum on March 31, entitled "Additional Suggestions Filed by *Amicus Curiae,* Pursuant to Suggestions of Mr. Justice Reed." Counsel for petitioners obtained a copy of the memorandum on April

2 and now ask leave to file a memorandum in reply to that filed by the attorney general.

Respectfully submitted,

CITY OF CHICAGO, a Municipal Corporation,

BOARD OF HEALTH OF THE CITY OF CHICAGO,

DR. ROBERT A. BLACK, Health Commissioner and Acting President of the City of Chicago,

Petitioners,

By BARNET HODES,
Corporation Counsel of the City of Chicago,
511 City Hall, Chicago, Illinois,
Attorney for Petitioners.

JAMES A. VELDE,
Assistant Corporation Counsel,

WALTER V. SCHAEFER,
Of Counsel.

AFFIDAVIT.

STATE OF ILLINOIS,
COUNTY OF COOK. } ss.

JAMES A. VELDE, being first duly sworn, deposes and says that he is one of the attorneys for the petitioners making the above motion; and that he has personal knowledge that the matters of fact stated therein are true.

(Signed) JAMES A. VELDE.

Subscribed and sworn to before me this 6th day of April, 1942.

(Signed) PAULINE JOAN ROSS,
Notary Public.

Notarial Seal.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

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CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

PETITIONERS' OBJECTIONS TO RESPONDENT'S MOTION TO STAY MANDATE AND TO MODIFY THE JUDGMENT AS TO COSTS.

BARNET HODES,
Corporation Counsel of the City of Chicago,
511 City Hall, Chicago, Illinois.
Attorney for Petitioners.

JAMES A. VELDE,
Assistant Corporation Counsel,
WALTER V. SCHAEFER,
Of Counsel.

CHAMPLIN-SHEALY COMPANY, CHICAGO 365

IN THE

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OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

vs.

FIELDCREST DAIRIES, INC.,
Respondent.

PETITIONERS' OBJECTIONS TO RESPONDENT'S MOTION TO STAY MANDATE AND TO MODIFY THE JUDGMENT AS TO COSTS.

Objection to Motion for Stay of Mandate.

The petitioners object strenuously to any stay of the mandate. A stay would delay the prosecution of the proceedings in the state court brought by the respondent's parent corporation, the Dean Milk Company. The first step to be taken by the City of Chicago in that case is to file a petition to vacate the temporary injunction obtained by the Dean Milk Company on the basis of the federal

court injunction which the judgment of this court vacates. The petition to be filed must allege that the federal court injunction no longer exists. Consequently the petition cannot be filed until the federal District Court has entered its order based on the mandate of this court.

Any delay in the prosecution of the state court case will be harmful to the interests of the City of Chicago because of the urgency of clarifying the doubt cast by the holding of the Circuit Court of Appeals on important powers of the city to adopt public health regulations.

Objections to Motion as to Costs.

The judgment properly allowed costs to the petitioners because it was the respondent (the trial court plaintiff) who selected a federal court in which to sue the petitioners. In urging the court to provide that neither party should recover costs against the other, the respondent is saying that the petitioners should bear almost all the costs, for the petitioners were on the losing side in the District Court and in the Circuit Court of Appeals. From the respondent's argument it would almost seem that the federal forum was originally chosen by the petitioners rather than by the respondent.

In an attempt to shift to the petitioners the responsibility for the federal court litigation, the respondent reviews some aspects of the state court litigation and comments that "the petitioners resisted the trial of the similar case in the state court" and that the incurring of costs was as much due to the "unsuccessful desire of the petitioners to have the case determined by the Federal courts" as it was due to the respondent's prosecution of the suit after the 1939 statute was enacted. The respondent refers par-

ticularly to contentions made by the petitioners in the state court that the determination of the state court case should await the determination of the federal court case.

There were obvious and compelling practical reasons for the petitioners to take this position. The state court case was not begun until May 15, 1940, after there had been extended hearings before the federal master resulting in an accumulation of a record of three thick volumes and after the master had rendered a report favorable to the city. The city did not wish to be compelled to spend the time and money involved in the duplication of this proceeding in the state courts. The city was placed in this dilemma by the respondent and its parent corporation, the Dean Milk Company. The city had no alternative but to defend both federal and state court suits. The respondent's responsibility for the federal court case is not affected by the fact that the petitioners sought to meet the respondent on the merits.

The respondent boldly suggests that the city, which was being sued in the federal and state courts by the respondent and its parent corporation, should have also sought to test the validity and construction of the ordinance in the state courts by proceeding against other dairies selling milk in paper containers after the federal court injunction was entered in October, 1940. Obviously any attempt to prosecute another dairy company would have been thwarted by a temporary injunction obtained on the basis of the federal court injunction in this case. Had the city discriminated against other dairy companies which lacked an injunction permitting them to sell milk in paper containers, the respondent would have had a monopoly over this type of milk distribution in Chicago.

Important factors in both the state and federal court litigation are overlooked in the respondent's motion.

1. In an attempt to mitigate its error in seeking a federal court adjudication of state issues, the respondent argues as if there were only one state issue in the case, the effect on the city's power of the Illinois Milk Pasteurization Plant Act which went into effect on July 1, 1939 (Laws of Illinois, 1939, p. 660) after this suit was begun. The other local question was that of the construction of the ordinance—i. e., whether or not the Chicago Board of Health correctly construed the ordinance to forbid the use of paper milk containers. The respondent alleged in its complaint that it was entitled to an injunction on the ground that the ordinance permits the use of paper milk containers (R. 14).

2. It seems clear that the federal court litigation was originally planned by the respondent's parent corporation to avoid a determination of the local questions by the state courts. In 1936 the Dean Milk Company, an Illinois corporation, asked for a permit to sell milk in Chicago in paper milk containers (R. 1692). The permit was not received. The Dean Milk Company had the respondent corporation, Fielderest Dairies, Inc., incorporated in the State of Michigan on November 5, 1937 (R. 844, 1609-12). The respondent obtained authority to do business in Illinois on November 29, 1937 (R. 845, 1613-18). The Dean Milk Company's plant is at Chemung, Illinois (complaint in *Dean Milk Company* case, Joint Statement of Counsel, p. 9) where the plant of the respondent is also located (R. 1030). The allegations of the complaint in the *Dean Milk Company* case (Joint Statement of Counsel, pp. 2-23) and of the complaint in the case at bar (R. 2-15) show clearly that the two corporations in fact carry on one and the same business. These facts indicate that the respondent

corporation was created in order to provide diversity of citizenship as a ground of federal jurisdiction.

3. In saying (motion, p. 3) that the Dean Milk Company began the state court suit "on May 15, 1940 following the passage of the Illinois Milk Pasteurization Plant Act of 1939," the respondent implies that the Dean Milk Company, out of respect for "the appropriate relationship between federal and state authorities," began to litigate the state issue in the state courts when it emerged in the case. That is not why the state court suit was filed. It was begun by the parent corporation only when the federal master ruled against the subsidiary corporation. The master filed his report in the District Court on April 27, 1940 (R. 1710). The state court suit was begun on *May 15, 1940.* The real significance of this date is that *on the preceding day, May 14, 1940,* the City of Chicago urged the federal District Court to enter a decree in accordance with the master's report (R. 1751) but, at the request of counsel for the respondent, who stated that there was no urgency in connection with the disposition of the case, the District Court continued the matter to October, 1940 (R. 1752; see affidavit in Joint Statement of Counsel, pp. 39-40). Obviously the respondent's parent corporation began the state court suit only because it appeared that its subsidiary corporation might be unsuccessful in the federal court litigation.

4. Throughout the course of the litigation the respondent has asserted the invalidity of the Chicago ordinance under the fourteenth amendment to the federal constitution. Mr. Justice Douglas noted in the opinion that this issue "lurks in the case even though it not be deemed substantial." The presence of this issue gave the federal court a ground of federal jurisdiction in addition to the diversity

of citizenship. If only the latter ground had been present, it would have been a simple matter for this court to dismiss the case, as was done in *Hawks* v. *Hamill*, 288 U. S. 52 (1933), on the ground of the reluctance of federal courts to grant injunctive relief on purely local issues. The mere raising of the federal constitutional question by the respondent made such a disposition of the case impossible, for the federal courts had a duty to decide the federal question. Yet there is so little foundation for the respondent's contention of alleged unconstitutionality that *it did not cite in its brief one federal court decision to support it.* The mere raising of this question greatly prolonged the litigation, for it required the extended hearings before the master on the question of the reasonableness of the ordinance in addition to preventing a final disposition of the case here as in the *Hawks* case. This factor is important in considering the responsibility for the federal court litigation.

Since the judgment of this court reversed the judgment of the lower court, costs are properly taxed against the respondent under subdivision 3 of Rule 32 of this court:

> "In cases of reversal of any judgment or decree by this court, costs shall be allowed to the appellant or petitioner, unless otherwise ordered by the court."

The mandatory language of section 254 of the Judicial Code (28 U. S. C. 352) requires that printing costs be taxed against the respondent. Section 254 provides:

> "There shall be taxed against the losing party in each and every cause pending in the Supreme Court the cost of printing the record in such case, except when the judgment is against the United States."

Decisions of this court in which cases have been dismissed on jurisdictional grounds indicate that the costs should be taxed against the respondent. In *Mansfield etc.*

Railway Co. v. *Swan*, 111 U. S. 379 (1884), even though the trial court's judgment was reversed, costs were taxed against the plaintiff in error because the reversal was on the ground that the plaintiff in error had removed the case to the federal court from a state court without diversity of citizenship appearing in the record. In *Graves* v. *Corbin*, 132 U. S. 571, 591 (1889), where the trial court lacked jurisdiction, costs were taxed against the defendant who obtained a removal from the state court even though the plaintiff had urged the Supreme Court to rule on the merits. In *Oklahoma Gas and Electric Co.* v. *Oklahoma Packing Co.*, 292 U. S. 386 (1933), where the decree of the trial court was vacated and the cause remanded to preserve the right of appellant to have the trial court's judgment reviewed, costs were taxed against the appellant because of lack of jurisdiction of this court to entertain a direct appeal even though at the time the appeal was taken the correct procedure under section 266 of the Judicial Code was unsettled.

The opinion in *Railroad Commission* v. *Pullman Company*, 312 U. S. 496 (1941), does not indicate what disposition this court made as to costs. Even if the costs were taxed against the Railroad Commission, there are good grounds here for requiring the respondent to pay them. In contrast to the lack of substance in the constitutional issue in the case at bar, Mr. Justice Frankfurter noted that the constitutional issue was "more than substantial," touching "a sensitive area of social policy." And in the *Pullman Company* case there was not the situation presented here of a federal court plaintiff and its parent corporation going back and forth between the federal and state courts in an attempt to find a forum which would render a favorable decision.

The respondent chose the federal forum to litigate the state issues. The petitioners were compelled to defend the litigation and should not be compelled to pay the costs now that this court has determined that the litigation should have been carried on in the state courts. If the City of Chicago is unsuccessful in the state court litigation, it will be compelled to pay the costs involved there. Certainly it should not be subjected also to costs in the federal court when the respondent should not have begun the litigation there. Of course, if the city is successful in the state courts, it should not be compelled to pay any costs whatever. No matter what the outcome of the state court litigation may be, the costs in this case should be borne by the respondent in accordance with the judgment entered by this court on April 27, 1942.

We urge the court to deny the motion to stay the mandate and the motion to modify the judgment as to costs.

Respectfully submitted,

CITY OF CHICAGO, a Municipal Corporation,
BOARD OF HEALTH OF THE CITY OF CHICAGO,
DR. ROBERT A. BLACK, Health Commissioner and Acting President of Board of Health of the City of Chicago,
Petitioners,

By BARNET HODES,
Corporation Counsel of the City of Chicago,
511 City Hall, Chicago, Illinois,
Attorney for Petitioners.

JAMES A. VELDE,
Assistant Corporation Counsel,

WALTER V. SCHAEFER,
Of Counsel.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of the Board of Health of the City of Chicago,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

CERTIORARI TO THE CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT, THERE HEARD ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

MOTION TO STAY THE MANDATE AND TO MODIFY THE JUDGMENT AS TO COSTS HEREIN AND REASONS IN SUPPORT THEREOF

FRED A. GARVEY,
1 North La Salle Street, Chicago, Illinois,
OWEN RALL,
135 South La Salle Street, Chicago, Illinois,
JOHN SPALDING,
1 North La Salle Street, Chicago, Illinois,
Attorneys for Respondent.

BARNARD & MILLER, 33 S. Market St., Chicago. Franklin 0562.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, a Municipal Corporation, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, Health Commissioner and Acting President of the Board of Health of the City of Chicago,

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MOTION TO STAY THE MANDATE AND TO MODIFY THE JUDGMENT AS TO COSTS HEREIN AND REASONS IN SUPPORT THEREOF.

MAY IT PLEASE THE COURT:

Motion to Stay Mandate.

1. Comes now Fielderest Dairies, Inc., respondent herein, by its attorneys, and moves the Court or some justice thereof when the Court is not in session to stay the issu-

ance of the mandate pending the disposition of the accompanying motion of the respondent to modify with respect to the payment of costs the judgment entered herein on April 27, 1942, the text of which judgment is set forth in the appendix hereto.

Motion to Modify Judgment.

2. Comes now Fielderest Dairies, Inc., respondent, within the time allowed by Rule 33 for the filing of a petition for rehearing and moves the Court to modify the judgment entered herein on April 27, 1942, by eliminating from said judgment that portion thereof providing that the vacation of the decree of the trial court is at the cost of the respondent.

Reasons in Support of Motions.

3. In support of the above motions the respondent respectfully represents the following facts.

4. Unless stayed, the mandate will issue on May 22, 1942, twenty-five days after the entry of the judgment (Rule 34). The time for filing of a petition for rehearing also expires May 22, 1942, (Rule 33) and the filing of such a petition does not stay the issuance of the mandate unless the time is enlarged by order of the Court or of a justice thereof when the Court is not in session (Rule 34).

5. The opinion in the case did not indicate what the judgment to be entered herein would provide with respect to costs, and Rule 32 makes no express provision as to costs in the event of the "vacating" of a decree of a lower court, so that it was necessary to obtain a copy of

the judgment before counsel could determine as a certainty what the judgment provided with respect to costs. It was not reasonably possible to prepare, have printed, and serve a motion to modify the judgment between the time that counsel received the copy of the judgment (even though seasonably requested by them of the Clerk and promptly furnished by him) and the date—May 11, 1942, —when the Court adjourned until May 25, 1942. Consequently, respondent respectfully asks that the issuance of the mandate be stayed until the Court on May 25, 1942, or thereafter, disposes of the motion to modify the judgment.

6. On the merits of the motion to modify the judgment by eliminating therefrom the provision that the petitioners recover costs from the respondent, we respectfully call the Court's attention to the fact that the petitioners resisted the trial of the similar case in the state court. The respondent's parent corporation, Dean Milk Company, commenced an action in the Circuit Court of Cook County, Illinois, on May 15, 1940, following the passage of the Illinois Milk Pasteurization Plant Act of 1939, which this Court holds in its opinion should first be construed by the state court before the instant case is decided by the United States District Court. (We refer the Court to the "Joint Statement of Counsel Concerning Case of *Dean Milk Company, an Illinois Corporation, v. City of Chicago, a Municipal Corporation, et al.*, in Circuit Court of Cook County, Illinois and Appellate Court of Illinois, First District" filed in this cause at the request of this Honorable Court, which for convenience, we shall designate as the "Joint Statement").

7. The Dean Milk Company complaint in the state court referred to the 1939 statute (Joint Statement, p. 5)

and attached a copy of it as Exhibit "B" to the complaint (Joint Statement, p. 23).

8. In opposition to the issuance of an injunction in the state court proceeding and in denial of the existence of any emergency justifying injunctive relief, the petitioners (then the defendants), set forth at length the Federal court proceedings (Joint Statement, pp. 38-40).

9. The injunction having been entered by the state court (Joint Statement, pp. 44-46), petitioners appealed to the Illinois Appellate Court and in support of a motion to stay the operation of the trial court's injunction filed written suggestions under oath stating, among other things, that the trial court should not have entered the injunction because of the pendency of the proceedings in the United States District Court (Joint Statement, p. 49).

10. Upon reversal pursuant to confession of error, the petitioners also moved the Appellate Court to direct the trial court to stay proceedings until the determination of the Federal court case (Joint Statement, p. 50) and filed written suggestions in support thereof urging that the pendency of the Federal court case, etc., "should now persuade this honorable court, on this chancery appeal, to stay proceedings in this cause until the litigation in the Federal court can be determined". (Joint Statement, p. 51). This motion was denied (Joint Statement, p. 54).

11. Upon remandment of the state court case to the trial court, the petitioners on June 25, 1940, filed a motion and petition that the trial court stay proceedings in that case pending the disposition of the case in the Federal court (Joint Statement, pp. 54-57).

12. Thereafter, the decree of the Federal district court was entered and an appeal was taken by petitioners to the Circuit Court of Appeals. At no time did petitioners

move, suggest or intimate before the Master or before the District Court that the Federal court should withhold action pending decision of any question by the state court. Nor did the petitioners seek to test the validity or construction of its ordinance in the state courts by proceeding against other dairies selling milk in paper bottles not protected by the District Court's injunction. This was conceded by the City's counsel during the oral argument before this Honorable Court on March 31, 1942, in response to a question by Mr. Justice Black.

13. On March 3, 1941, this Court filed its opinion in *Railroad Commission of Texas* v. *The Pullman Company*, 312 U. S. 496. The appeal in this case was then pending undetermined in the Circuit Court of Appeals. The petitioners did not suggest in any brief filed in that Court, nor upon the oral argument which took place there in May, 1941, nor by petition for rehearing following an adverse decision rendered August 4, 1941, that the Federal court should in the exercise of discretion, or otherwise, stay its hand pending a decision of any question by the state court.

14. Upon the oral argument in this Honorable Court, the petitioners expressly asked the Court to decide on their merits the issues here presented.

15. The decision of the case which the Court made was, therefore, one not requested by any litigant but is based upon the broad grounds of policy enunciated in the opinion of the Court. Under this circumstance, we most respectfully suggest that the costs ought not to be taxed against the respondent, and that the judgment order should be modified (as permitted by Rule 32) by providing that neither party should recover costs against the other, or, in the alternative, by providing such other determination as to costs as to the Court shall seem meet.

16. Owing to the length of the record, the costs in the case are substantial and if taxed against the respondent will constitute a very heavy burden upon it. Because the decision of this case was not in favor of either party upon the merits, and because the incurring of costs was as much due to the unsuccessful desire of the petitioners to have the case determined by the Federal courts as it was due to the fact that respondent continued to prosecute this suit (then already pending) after the 1939 statute was enacted, respondent respectfully urges the Court to allow the relief here sought.

FIELDCREST DAIRIES, INC.,
Respondent,
By FRED A. GARIEPY,
OWEN RALL,
JOHN SPALDING,
Its Attorneys.

STATE OF ILLINOIS, } ss.
COUNTY OF COOK. }

Owen Rall, being first duly sworn, on oath deposes and says that he is a member of the bar of the Supreme Court of the United States, is one of the attorneys for the respondent herein, and is authorized to file this affidavit; further, that the above motion is subscribed in behalf of the respondent by its attorneys above mentioned by the authority of said respondent; and that the statements contained in said motion are true to the best of the knowledge and belief of this affiant.

(S) OWEN RALL.

Subscribed and sworn to before me this 19th day of May, A. D. 1942.

(S) EDNA M. RADOLL.

Appendix—Form of Judgment Entered April 27, 1942.

SUPREME COURT OF THE UNITED STATES.

No. 706 —, October Term, 1941.

CITY OF CHICAGO, a Municipal Corporation, Board of Health of the City of Chicago, *et al.*,

Petitioners,

v.

FIELDCREST DAIRIES, INC.

On writ of certiorari to the United States Circuit Court of Appeals for the Seventh Circuit.

This cause came on to be heard on the transcript of the record from the United States Circuit Court of Appeals for the Seventh Circuit, and was argued by counsel.

On consideration whereof, It is now here ordered and adjudged by this Court that the judgment of the said United States Circuit Court of Appeals, in this cause, be, and the same is hereby, vacated with costs; and that this cause be, and the same is hereby, remanded to the District Court of the United States for the Northern District of Illinois with directions to retain the bill pending a determination of proceedings in the state court in conformity with the opinion of this Court.

(Signed) WM. O. DOUGLAS.

April 27, 1942.

MR. JUSTICE ROBERTS concurs in the result.

FILE COPY

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

MOTION BY THE STATE OF ILLINOIS, AS AMICUS CURIAE, FOR LEAVE TO PARTICIPATE IN THE ORAL ARGUMENT OF THE ABOVE ENTITLED CAUSE.

GEORGE F. BARRETT,
Attorney General of the State of Illinois,
Springfield, Illinois,
Attorney for Amicus Curiae.

Albert E. Hallett,
Assistant Attorney General,
Of Counsel.

THE DUNTHORP-WARREN PRINTING COMPANY, 310 WEST JACKSON, CHICAGO

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

MOTION BY THE STATE OF ILLINOIS, AS AMICUS CURIAE, FOR LEAVE TO PARTICIPATE IN THE ORAL ARGUMENT OF THE ABOVE ENTITLED CAUSE.

And now comes the STATE OF ILLINOIS, as *amicus curiae*, by GEORGE F. BARRETT, its Attorney General, and respectfully shows unto this Honorable Court the following:

1. That there is at this time pending and undetermined in this Court a certain cause entitled *City of Chicago, a Municipal Corporation, et al., Petitioners* v. *Fieldcrest Dairies, Inc., Respondent*, October 1941 Term, No. 706.

2. That perhaps the most important single issue which must necessarily be determined by this Court in its decision of the said case is whether or not the City of Chicago, a municipal corporation, located entirely within and being but a creature of the State of Illinois, may, after the enactment by the General Assembly of the State of Illinois of

an act clearly demonstrating that the public policy of the State is to authorize and legalize the use of "single service containers" in the sale and distribution of pasteurized milk throughout the entire State, thereafter enforce a local ordinance prohibiting entirely the use of such containers within the corporate limits of the City of Chicago.

3. That the issue above referred to involves a matter in which the State of Illinois, in its sovereign capacity, is not only vitally concerned but is desirous of sustaining the contention that such an ordinance is necessarily invalid as contrary to the public policy of the State respecting this same question and as limiting the applicability throughout the State of an act of the General Assembly.

4. That the State of Illinois has, simultaneously with the filing of this motion, filed with the Clerk of this Court forty (40) copies of a printed brief as *amicus curiae*, and has served copies of the said brief and of this motion upon the attorneys for the various parties to the above entitled cause.

5. That the Attorney General of the State of Illinois is of the opinion that this State's participation in the oral argument of the above entitled cause might assist this Court in its consideration of the said cause and might serve to clarify the issues before the Court in this litigation.

6. That counsel for the respondent have agreed to allocate twenty (20) minutes of the hour to which they would otherwise be entitled, to the State of Illinois for argument as such *amicus curiae*, provided such an arrangement is expressly sanctioned by order of this Court.

7. That the oral argument of the said cause has been set for Monday, March 30, A. D. 1942, and that it appears as the second case on the call for that day.

WHEREFORE, the STATE OF ILLINOIS, as *amicus curiae* herein, moves for the entry of an order granting leave to

it to participate in the oral argument of the above entitled cause, and allocating to it twenty (20) minutes out of the hour to which counsel for the respondent would otherwise be entitled.

George F. Barrett

Attorney General of the State of Illinois, Amicus Curiae.

AFFIDAVIT.

STATE OF ILLINOIS, } ss.
COUNTY OF COOK. }

ALBERT E. HALLETT, being first duly sworn, on his oath deposes and says that he is a member of the bar of this Court and Assistant Attorney General of the State of Illinois; that in such capacity he is in personal charge of the handling of the above entitled matter before this Court insofar as the said State is concerned; that he has read the foregoing motion; and that the facts therein set forth are true.

Albert E. Hallett

Subscribed and sworn to before me this 26th day of March, A. D. 1942.

Frances D. Holleran

Notary Public, Cook County, Illinois.

FILE COPY

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FILED
MAR 27 1942
CHARLES ELMORE CROPLEY
CLERK

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1941.

No. 706

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

BRIEF OF AMICUS CURIAE, THE STATE OF ILLINOIS.

GEORGE F. BARRETT,
Attorney General of the State of Illinois,
Springfield, Illinois,
Attorney for Amicus Curiae.

Albert E. Hallett,
Assistant Attorney General,
Of Counsel.

THE DUNTHORP-WARREN PRINTING COMPANY, 310 WEST JACKSON, CHICAGO 56

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IN THE

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OCTOBER TERM, A. D. 1941.

No. 706.

CITY OF CHICAGO, A MUNICIPAL CORPORATION, BOARD OF HEALTH OF THE CITY OF CHICAGO, DR. ROBERT A. BLACK, HEALTH COMMISSIONER AND ACTING PRESIDENT OF BOARD OF HEALTH OF THE CITY OF CHICAGO,

Petitioners,

vs.

FIELDCREST DAIRIES, INC.,

Respondent.

BRIEF OF AMICUS CURIAE, THE STATE OF ILLINOIS.

STATEMENT.

The STATE OF ILLINOIS, by GEORGE F. BARRETT, Attorney General, appears as *amicus curiae* pursuant to Paragraph 9 of Rule 27 of this Court. The law of Illinois relating to the powers and duties of the Attorney General in the premises is stated in the case of the *People ex rel. George F. Barrett, Attorney General, Petitioner,* v. *Philip J. Finnegan, Judge of the Circuit Court of Cook County, Respondent,* (1941) 378 Ill. 387, as follows:

"The office of Attorney General, as it existed at the common law, is one of ancient origin. He was the

only law officer of the Crown. (4 Reeves Hist. Eng. Law, chap. 25, p. 122.) The prerogatives which pertained to the Crown of England under the common law, in this country are vested in the people and the necessity for the existence of a public officer charged with the protection of public rights and the enforcement of public duties, by proper proceedings in the courts of justice, is just as imperative here as there.

"In this State the constitution, by creating the office of Attorney General under its well-known common law designation and providing that he shall perform such duties as may be prescribed by law, ingrafted upon the office all the powers and duties of an Attorney General as known at the common law, and gave the General Assembly power to confer additional powers and impose additional duties upon him. The legislature cannot, however, strip him of any of his common law powers and duties as the legal representative of the State. (*Fergus* v. *Russel*, 270 Ill. 304.) * * * As chief law officer of the State he may exercise all such power and authority as public interest may from time to time require. He may institute, conduct and maintain all such suits and proceedings as he deems necessary for the enforcement of the laws of the State, the preservation of order and the protection of public rights. (*Ex parte Young*, 209 U. S. 123, 28 Sup. Ct. 441, 52 L. ed. 714.)"

The reason for appearance of *amicus curiae* is to invite the Court's attention to the fact that the issues presented by the parties to this cause involve an important public question that affects the public interests of the People of the State of Illinois, and to request that the Court abstain from any action in this cause which may impinge the authority of the State by limiting the general application throughout the State of an Act of the General Assembly.

ARGUMENT.

It is our position that the question presented is whether the City has the power, under the statutes in question, to outlaw that which the State has legalized. We say this is the controlling question in this case; that the principles decisive of the question are settled in Illinois; and that the question is one of local law. Should the City's contention in this regard be sustained, the effect would be to impinge the power of the State and limit the application of an Act of the General Assembly by preventing its operation within the territory of the City which is within the territorial jurisdiction of the State.

The City contends that by virtue of Article 5 of the Illinois Cities and Villages Act, the pertinent provisions of which are set forth in Petitioner's Brief at p. 13, it has authority to prohibit, by ordinance, the use of single service milk containers in the sale and distribution of pasteurized milk within the City; and that this power was not affected by any of the provisions of the "Illinois Milk Pasteurization Plant Law" of 1939, which statute is set forth in full at p. 80 *et seq.* of Petitioners' Brief as Appendix "A".

For the purpose of this argument, we shall assume that the term "standard milk bottle" as used in the ordinance means what the Master said it did, viz.: "a glass bottle of the type, shape and proportions well-known to the trade and the community in Chicago as having been used for many years for the delivery of milk at retail." It is conceded for the purpose of this argument that the City had the power by virtue of the general provisions above noted, which are contained in Article 5 of the Cities and Villages Act of Illinois to prohibit the use of single service milk

containers in the sale and distribution of pasteurized milk in the City of Chicago, prior to the adoption of the "Illinois Milk Pasteurization Plant Law", and the specific approval, by the Director of the Department of Public Health of the State, of a pasteurization plant and single service containers used and filled therein.

An examination of the provisions of the "Illinois Milk Pasteurization Plant Law" of 1939 will show that the State has recalled certain of the powers theretofore conferred upon cities by the provisions of Article 5 of the Cities and Villages Act with reference to regulating the pasteurization of milk and the packaging, sale and distribution of pasteurized milk. The Act of 1939 requires that any person operating a pasteurization plant who distributes, delivers or sells pasteurized milk, or pasteurized milk products for consumption in the State of Illinois shall annually make application to the Department for a Certificate of Approval. Section 3 of the Act provides,

> "Any person who is hereafter engaged in operating a pasteurization plant for the purposes of distributing, delivering, or selling pasteurized milk or pasteurized milk products for consumption in the State of Illinois shall before engaging in such business make application to the Department for a Certificate of Approval."

Section 4 requires that upon receipt of such application, the Department shall make an inspection of the pasteurization plant, and, in the event the plant, equipment and methods of operation are found to comply with the provisions of the Act, the Director shall issue a Certificate of Approval upon payment of the required fee as is in the Act provided. Section 6 provides that any person operating a pasteurization plant shall, at any time, allow the Department to inspect such plant and take such samples as may be deemed necessary by the Department. Section 7 provides for the labeling of all "bottles, cans, packages and other containers enclosing milk or any milk product

defined in this Act." Section 8 requires that all pasteurized milk and milk products shall be placed in their final milk containers at the plant in which they are pasteurized and makes it unlawful for hotels, soda fountains, restaurants, grocery stores, milk depots, milk stations and similar establishments to sell or serve any pasteurized milk or milk products except in the original container in which it was placed at the point of pasteurization, provided that this requirement shall not apply to milk or milk products consumed on the premises, which may be served from the original container or from a dispenser approved by the Department for such purpose. This Section also prohibits the sale or distribution of bulk, loose or dipped pasteurized milk even though it has been heated as required by the Act.

This much of the Act makes it apparent that the Legislature intended to provide a law investing the State Department of Public Health with the power and duty to regulate the pasteurization of milk and milk products and the packaging, distributing and selling of pasteurized milk products. The statute authorizes the Department to inspect not only the pasteurization plant but also the *equipment and methods of operation.* With respect to "methods of operation", the statute provides that all pasteurized milk or milk products shall be placed in their final delivery container in the plant in which they are pasteurized. The Section so providing makes it unlawful for hotels and similar establishments as well as grocery stores and other retail distributing establishments to sell or serve any pasteurized milk or milk products except in the original container in which it was placed at the point of pasteurization. How could the Legislature any more clearly evidence an intent that milk which is pasteurized in a pasteurization plant approved by the State Department of Public Health, placed in containers in said plant, which containers are approved by the Department of Public Health, and which

must be sold in said original containers, may be sold in said containers at any place in the State of Illinois?

Item 10 of Section 15 of the Act provides in part,

> "Single service containers, caps, gaskets and similar articles shall be manufactured and transported in a sanitary manner."

Item 18 of the same Section provides:

> "Bottling or packaging of milk and milk products shall be done at the place of pasteurization by approved mechanical equipment."

It thus appears that the Legislature intended that the Department of Health of the State of Illinois would have the power to approve the use of single service containers that conformed with the requirements of the Act. In short the policy of the legislature as expressed in the entire Act is to legalize the distribution and sale of pasteurized milk in single service containers for consumption in the State of Illinois, and not merely in the part of the State of Illinois lying outside of the City of Chicago, provided the milk is pasteurized and packaged in a plant and in containers approved and licensed by the Depagtment of Public Health.

As was stated in the opinion of the Circuit Court of Appeals in this case:

> "The authorities are uniform that any ordinance which conflicts with any statute or public policy adopted by the State Legislature is invalid. The rule is aptly stated in 2 McQuillin on Municipal Corporations, 572:
>
> > 'A municipal corporation cannot, without special authority prohibit what the policy of a general statute permits. Nor, on the other hand, can an ordinance permit that which the State's policy forbids. Consequently under a general grant of power, a Municipal Corporation cannot adopt ordinances "which infringe the spirit, or are repugnant to the policy of the State as declared in its legislation." It thus follows that if the State

> has expressed through legislation a public policy with reference to a subject, a municipality cannot ordain in respect to the subject to an effect contrary to, or in qualification of the public policy so established. * * *"

"Such rule has been recognized by the Illinois courts. *City of Chicago* v. *Union Ice Cream Mfg. Co.*, 252 Ill. 311; 315; *City of Chicago* v. *Drogasawacz*, 256 Ill. 34, 37; *City of Mirango* v. *Roland*, 263 Ill. 531, 534. In the *Marengo* case, the Court said:

> 'Municipal authorities, under a general grant of power, cannot adopt ordinances which infringe the spirit of a State law or are repugnant of the general policy of the State. * * *'"

Section 19 of the Act of 1939 provides:

> "Nothing in this act shall impair or abridge the power of any city, village or incorporated town to regulate the handling, processing, labeling, sale or distribution of pasteurized milk, and pasteurized milk products, provided such regulation not permit any person to violate the provisions of this act."

It is submitted there is nothing in this section that might properly be interpreted as authorizing the city to outlaw the containers that the State has legalized for use within the state, in accordance with the express provisions of the Act.

At the trial it was stipulated (R. 695-6) that if S. V. Layson were called as a witness and duly sworn and testified in this cause, he would testify as follows:

> "That he is Milk Sanitarian of the Department of Public Health of the State of Illinois with offices at Springfield, Illinois; that the Department of Public Health of the State of Illinois by or under the direction of the affiant has made an inspection of the plant of Fieldcrest Dairies, Inc., located in the village of Chemung, McHenry County, Illinois, approximately 76 miles from the City of Chicago, Illinois, and that said plant and its equipment and apparatus have been approved by the Department of Health of the State of Illinois as complying with the laws and regulations

of said state pertaining to milk plants selling liquid milk and cream to the public at wholesale and retail; that on or about November 17, 1938, the Department of Public Health of the State of Illinois issued its Certificate No. 395 for the calendar years 1938, and on or about January 18, 1939, issued its Certificate No. 59 for the calendar year 1939, which latter certificate, duly sealed with the seal of the Department of Public Health of the State of Illinois and signed by A. C. Baxter, Acting Director of Public Health of the State of Illinois, is now in full force and effect, and that the language of said certificate last mentioned is substantially as follows:

> 'The State Department of Public Health considers that the construction and equipment of the pasteurization plant is such that with proper maintenance and operation, the pasteurized milk or milk products will be safe for human consumption. The continued safety of the pasteurized milk or milk products depends upon the continuous proper maintenance and operation of the plant, the responsibility for which rests with the management of said plant.'

> "That the Department of Public Health of the State of Illinois, in reliance upon tests made by the Department of Dairy Husbandry of the University of Illinois by or under the direction of Dr. M. J. Prucha, which tests have been accepted and relied upon by the said Department of Health, has approved the paper 'Pure-Pak' container for the sale of liquid milk and milk products to the public in the State of Illinois; that the Department of Public Health of the State of Illinois has inspected the pasteurization plant and also the Ex-Cell-O 'Pure-Pak' machine located in the plant of the Fielderest Dairy at Chemung, Illinois, and has approved the same."

It thus appears as a fact that the single service milk containers in question, as well as the plant and method of operation, etc. that are involved in the question, were approved and licensed by the State Department of Public Health under the authority of the Statute.

Counsel for Petitioners rely upon the case of *City of Geneseo* v. *Illinois Northern Utilities Company*, 378 Ill. 506. They claim that this case is decisive of the question here presented, but their claim is not supported by the case. In that case the claim was made that the Public Utilities Act of Illinois had the effect of recalling from Municipal Corporations within the State the power granted under Article 5 of the Cities and Villages Act to "regulate the locating, constructing or laying a track * * * in any street, alley or public place." The Court in that opinion held that the Public Utilities Act gave to the Commerce Commission of Illinois general supervision over utilities but that this grant of power did not affect the power of the City to control the occupancy of its streets. The power of the Commerce Commission to regulate utilities is separate and distinct from the power of cities to control the occupancy of their streets and the decision in that case has no application to the question here presented.

Another case relied upon by the City of Chicago is the case of *City of Ottawa* v. *Brown*, 372 Ill. 468. In that case the Legislature adopted, "An Act to regulate the storage, transportation, sale and use of gasoline and volatile oils," which became effective July 1, 1919. The Act contained the following provision, "Except in cities or villages where regulatory ordinances upon the subject are in full force and effect, the Department of Trade and Commerce shall have power to make and adopt reasonable rules and regulations governing the keeping, storage, transportation, selling or use of gasoline and volatile oil." When this statute took effect, the City had in force an ordinance regulating the storage of gasoline, which ordinance was adopted pursuant to the powers granted by Article 5 of the Cities and Villages Act. The Court held that the City had sufficiently exercised the power granted by the general statute to enable it either to amend its ordinance or to adopt a

broader one. The decision of the Court in this case has no bearing on the question here presented.

For the reasons stated, we respectfully submit that a decision sustaining the contention of the City of Chicago would be contrary to the law of the State of Illinois and would limit the general application throughout the State of an Act of the General Assembly.

Respectfully submitted,

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SUPREME COURT OF THE UNITED STATES.

No. 706.—October Term, 1941.

City of Chicago, A Municipal Corporation, Board of Health of the City of Chicago, et al., Petitioners,
vs.
Fieldcrest Dairies, Inc.

On Writ of Certiorari to the United States Circuit Court of Appeals for the Seventh Circuit.

[April 27, 1942.]

Mr. Justice Douglas delivered the opinion of the Court.

Respondent, a Michigan corporation authorized to do business in Illinois, sells milk to wholesalers and retailers in various cities in the vicinity of Chicago. By an ordinance passed on January 4, 1935, the City of Chicago required that milk or milk products "sold in quantities of less than one gallon shall be delivered in standard milk bottles." § 3094. Respondent sought a permit from petitioner Board of Health to sell milk in "Pure-Pak" paper containers in that city. That permit was not granted. Thereafter respondent filed suit against petitioners in the United States District Court for the Northern District of Illinois alleging, *inter alia*, that its "single service, sterile, sanitary and non-absorbent" containers are "standard milk bottles" within the meaning of the Chicago ordinance; that if the ordinance is construed as prohibiting respondent from using its paper containers the ordinance is unconstitutional and invalid under the federal and state constitutions; and that the refusal of the permit has and will cause respondent irreparable damage. The complaint prayed for a declaratory judgment that the ordinance be construed so as not to prohibit respondent from using its containers or, in the alternative, that the ordinance insofar as it does prevent such use is unconstitutional and invalid. Issue was joined. In May, 1939, the District Court referred the cause to a master who held extended hearings. In July, 1939, the so-called Illinois Milk Pasteurization Plant Law (L. 1939, pp. 660-666; Rev. Stat. 1941, c. 56½, §§ 115-134) was enacted, containing certain provisions regulating the use of single service and paper containers (§ 15) and reserving to cities, villages and incorporated

towns the power to regulate the distribution, etc. "of pasteurized milk and pasteurized milk products, provided that such regulation not permit any person to violate any provisions of this Act." § 19. On April 27, 1940, the master submitted his report finding that respondent's paper containers were not "standard milk bottles" within the meaning of the ordinance and that the ordinance as construed was valid and constitutional. In October, 1940, the District Court, on exceptions to the master's report, held that respondent's containers were "standard milk bottles" within the meaning of the ordinance. And it went on to hold that under the Milk Pasteurization Plant Law the city was without power to prohibit the use of such containers. It entered a decree in accordance with that finding and enjoined petitioners from interfering with respondent in the sale and delivery of milk and milk products in those containers. 35 F. Supp. 451. On appeal to the Circuit Court of Appeals, that court held that the District Court erred in holding that respondent's containers were "standard milk bottles" within the meaning of the ordinance. But it concluded that the ordinance insofar as it prohibited, rather than regulated, the use of paper containers was invalid by reason of the state Act. And it went on to intimate by way of *obiter dictum* that if the ordinance were construed to prohibit the use of respondent's containers it would not survive as a constitutional exercise of the police power. 122 F. 2d 132.

On May 15, 1940, while the cause was pending before the District Court, Dean Milk Company, of which respondent is a wholly owned subsidiary, instituted an action in the Illinois state court against petitioners and other city officials raising substantially the same issues and seeking substantially the same relief as respondent raised and sought in the federal court. After judgment had been rendered by the District Court in this case and while the appeal was pending, Dean Milk Company moved in the state court for a decree granting the relief prayed for and retaining jurisdiction by the state court pending final determination of the appeal in this case. Such a decree was entered by the state court in December 1940.

We granted the petition for certiorari because of the doubtful propriety of the District Court and of the Circuit Court of Appeals in undertaking to decide such an important question of Illinois law instead of remitting the parties to the state courts for

litigation of the state questions involved in the case. *Railroad Commission* v. *Pullman Co.*, 312 U. S. 496.

We are of the opinion that the procedure which we followed in the *Pullman* case should be followed here. Illinois has the final say as to the meaning of the ordinance in question. It also has the final word on the alleged conflict between the ordinance and the state Act. The determination which the District Court, the Circuit Court of Appeals or we might make could not be anything more than a forecast—a prediction as to the ultimate decision of the Supreme Court of Illinois. Here as in the *Pullman* case "a federal court of equity is asked to decide an issue by making a tentative answer which may be displaced tomorrow by a state adjudication." 312 U. S. p. 500. Furthermore, the dispute in its broad reach involves a question as to whether a city has trespassed on the domain of a State. Though that issue was not in the case when the complaint was filed, it emerged, due to the passage of the Milk Pasteurization Plant Law, long before the District Court entered its decree. The delicacy of that issue and an appropriate regard "for the rightful independence of state governments" (*Beal* v. *Missouri Pacific R. Co.*, 312 U. S. 45, 50) reemphasize that it is a wise and permissible policy for the federal chancellor to stay his hand in absence of an authoritative and controlling determination by the state tribunals. As we said in the *Pullman* case, "The resources of equity are equal to an adjustment that will avoid the waste of a tentative decision" and any "needless friction with state policies." See p. 500 and cases cited; *Thompson* v. *Magnolia Petroleum Co.*, 309 U. S. 478, 483-484. It is an exercise of a "sound discretion, which guides the determination of courts of equity". *Beal* v. *Missouri Pacific R. Co.*, *supra*, p. 50. In this case that discretion calls for a remission of the parties to the state courts which alone can give a definitive answer to the major questions posed. Plainly they constitute the more appropriate forum for the trial of those issues. See 54 Harv. L. Rev. 1379. Considerations of delay, inconvenience, and cost to the parties, which have been urged upon us, do not call for a different result. For we are here concerned with the much larger issue as to the appropriate relationship between federal and state authorities functioning as a harmonious whole.

The desirability of the course which we have suggested is not embarrassed by any question as to whether ready recourse may

be had to the state courts. The availability of the state tribunal is obvious, since a case involving substantially identical issues and brought by respondent's parent corporation is pending in the state court. Cf. *Gilchrist* v. *Interborough Rapid Transit Co.*, 279 U. S. 159.

It is of course true that respondent sought to raise in its complaint a constitutional issue—an issue which lurks in the case even though it not be deemed substantial. But here, as in the *Pullman* case, that issue may not survive the litigation in the state courts. If it does not, the litigation is at an end. That again indicates the wisdom of allowing the local law issues first to be resolved by those who have the final say. Avoidance of constitutional adjudications where not absolutely necessary is part of the wisdom of the doctrine of the *Pullman* case.

We therefore vacate the judgment and remand the cause to the District Court with directions to retain the bill pending a determination of proceedings in the state court in conformity with this opinion.

It is so ordered.

Mr. Justice ROBERTS concurs in the result.

A true copy.

Test:

Clerk, Supreme Court, U. S.